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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
Experiment Station, and Extension Service

Volume XIX

January 1, 1936

Number 1

## Favorable Factors Dominate '36 Agricultural Outlook

Favorable factors outnumber the unfavorable ten to four in the 1936 agricultural outlook report for Illinois released today by Dean H. W. Mumford, of the College of Agriculture, University of Illinois.

In brief, the outlook promises further increases in the demand for farm products; the increased activity indicated for building construction is a very favorable sign, and livestock prices are expected to remain high in relation to grain prices at least until new crops are available, the report says. Unemployment, however, is still at a high level, and the foreign demand for agricultural products shows but little improvement.

The report was prepared by agricultural economists and staff members of the college on the basis of data compiled by the federal department of agriculture.

The ten favorable outlook factors in the general agricultural situation, according to the report, are: (1) Business activity has been increasing since March, 1933, and is expected to be higher in 1936 than in 1935. (2) The wholesale price level in the United States seems likely to be well maintained during 1936. (3) The average level of wholesale prices in important foreign countries continues steady. (4) The movement in industrial production is upward in practically all commercial countries. (5) Business failures in the United States are declining.

(6) The supply of credit available for farmers in 1936 will be larger, relative to needs, than for several years. (7) Debt delinquency is declining. Foreclosures were fewer in 1935 than in any year since 1931. (8) Purchasing power of farm products has continued to improve. The November, 1935, index of 89 was nine points higher than that of a year earlier and 34 points higher than for March, 1933. (9) Increases are expected for 1936 in automobile production, railway expenditures and building construction. Increases in expenditures for railway equipment and building construction have been slow to date, and the better prospect is important. (10) Corporation earnings and dividends were larger in 1935 than in 1934, and the expectation is that they will continue upward in 1936.

The year 1936 promises to be the fourth one of business improvement following the decline of 1929-1932, the report points out. Time is a factor in business cycles, and the fundamentals of the present recovery are typical, although the course of recovery has been modified by the unusual methods designed to speed the process.

The four unfavorable outlook factors in the general agricultural situation are: (1) While considerable increases in residential building may be expected in 1936, the amount of privately financed non-residential building will probably continue to be relatively small. Value of building contracts in 1935 averaged only one-third of the 1923-1925 level.

(2) Trade barriers will continue to restrict the 1936 volume of agricultural exports from the United States to a very low level. (3) There is still a large amount of unemployment, and relief burdens continue heavy. (4) The general decline in farm taxes which occurred from 1930 to 1934 has apparently come to an end.

Cash income available for farm families will probably be higher in 1936 than for several years, the report predicts. No significant changes in prices of goods for family maintenance are anticipated during the next six months.

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Illinois Will Launch NBC Innovation In Broadcasting

An innovation in network broadcasting will be inaugurated at the University of Illinois on January 15 when the National Broadcasting Company starts a series of monthly broadcasts direct from the campuses of leading land grant colleges of the nation. The programs will be staged during the national farm and home hour, 11:30 a. m. to 12:30 p. m., central standard time.

Service which the various land grant colleges are rendering to agriculture and to the public will be featured during the series. H. W. Mumford, dean of the College of Agriculture, University of Illinois, will be the principal speaker during the Illinois program.

Coming as it does during the thirty-ninth annual Farm and Home Week, the Illinois program will be staged direct from the University Auditorium as an added event for the several thousand farmers, homemakers and rural leaders who will gather at the university, January 13 to 17. Everett Mitchell, chief of Chicago's NBC announcers, will preside as master of ceremonies.

The University of Illinois concert band, famous throughout the country, will play during the program, which will be broadcast over a network of 52 stations. Prof. F. B. Stiven, director of the School of Music, is arranging special musical numbers for the broadcast. The band numbers will be under the supervision of Prof. A. A. Harding, director of bands.

President A. C. Willard will probably appear to extend greetings to friends, alumni and former students of the university in all parts of the nation. Recognition also will be given to the late Jonathan B. Turner. His pioneering thinking and action is generally acknowledged as having given Illinois credit for starting the land grant college system of education.

Among midwestern stations over which the program may be heard are WCFL, Chicago; KWK, St. Louis, Mo.; WLW, Cincinnati, O.; WHO, Des Moines, Ia.; WIRE, Indianapolis, Ind., and WAVE, Louisville, Ky.

Following the Illinois broadcast, the series will be continued with similar programs from New York, Colorado, Arkansas, Oregon, Massachusetts, South Dakota, Vermont, Florida, Kansas and Kentucky on the third Wednesday of the month.

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Dozen Counties Enter State Discussion Team Tourney

Neighborhood discussion which used to center around the village store stove and similar gathering places has now been elevated to the status where it rates a state tourney of its own, it is announced by D. E. Lindstrom, extension specialist in rural sociology at the College of Agriculture, University of Illinois.

Twelve counties will have four-man teams in the state discussion team tourney which will be held January 14 and 15 as one of the features of the thirty-ninth annual Farm and Home Week at the college, he announced. Contenders will come from Jo Daviess, Stephenson, Whiteside, DeKalb, DuPage, Will, McDonough, Ford, Edgar, Effingham, Randolph and Williamson counties. Each of these counties is now selecting its best team in a series of preliminary county tourneys.

Holding of the state tourney climaxes work which was started several years ago by the extension service of the agricultural college and county farm advisers to stimulate wholesome and enlightened discussion of current farm problems. Causes of the agricultural depression, federal aid for farmers in solving their problems, agricultural adjustment activities and related topics are being discussed in the tourney this year.

Semi-finals of the state tourney will start at 9 o'clock Wednesday morning, January 14, and continue until the two best teams from the 12 competing counties have been selected. The finals between these two will be held Wednesday, January 15, at 4 p. m.

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Stockmen Out To Make Most Of Brighter Farm Outlook

Farmers throughout Illinois are out to cash in on the fact that livestock prices are expected to remain high in relation to grain prices at least until new crops are available, it is reported by E. T. Robbins, livestock extension specialist of the College of Agriculture, University of Illinois.

Already 2,402 farmers in 58 counties have signed up to get the latest information on approved livestock management through the college's extension service project. These stockmen and other farmers have just attended county livestock management schools held by the college and farm advisers. Back home on their own farms they not only will practice methods explained at the schools, but also will lead community discussions on improved livestock management as opportunity presents itself during the winter months.

Although Illinois farmers now get more than two-thirds of their several hundred million dollar cash income from livestock and livestock products, cooperators in the livestock management project realize that stock on some farms could be much better handled, Robbins said. For one thing some adjustments can be made to fit the livestock program more closely into the general farm management scheme so as to make the whole enterprise more satisfactory under present economic conditions, he explained.

Methods such as will be advocated in the livestock management project have been shown by farm management records to be worth as much as \$1,000 a year extra income for the best Illinois farmers. Farm accounts show that the most successful farmers excel other stockmen because they start with better animals, keep their stock healthier, market their animals in better condition, sell on higher markets, make more efficient use of horses, make more use of legumes for pasture and for hay and combine home-grown feeds into better rations without using much other feed.

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Late-Model Milk Cows Are Superior To 1925 Animals

Current models in milk cows are quite as much of an improvement over their ancestors of 1925 vintage as the sleek, stream-lined cars of today are over the cumbersome automobiles of a few years back, according to J. G. Cash, dairy extension specialist at the College of Agriculture, University of Illinois.

Setting the standard for advancements in the milk-cow "models" have been the dairy herd improvement associations. These are organized and sponsored by the extension service of the agricultural college as a means of furthering better breeding, feeding and management of farm dairy herds. At the present time there are 58 of these associations in which 20,000 cows are being tested for milk and butterfat production and otherwise handled under approved methods.

Value of these methods in putting dairy herds on a more efficient and more profitable basis is evident from a review of past records, Cash pointed out. In 1925 dairy herd improvement association cows in Illinois averaged only 282 pounds of butterfat. In 1934 member cows averaged 324.9 pounds. On the basis of 1934 prices the late-model cow cleared \$64 above feed costs. On this same basis the 1925 cow would have cleared \$52, or \$12 less.

If dairy herd improvement association farmers had obtained no better production in 1934 than they did in 1925, the total net return above feed costs in 1934 would have been \$240,000 less for the 20,000 member cows of the state. While preliminary reports show that average production in 1935 probably will be less than in 1934 because of the shortage of feed following the 1934 drouth, most members are confident that their herds are continuing to improve in efficiency, Cash said.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

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Number 2

## Mystery Of Poor Corn Crops Solved By New Soil Test

Through a new potassium test and experiments with potassium fertilizers, the mystery of corn crop failures on some of Illinois' older soils has been solved, it is reported by C. M. Linsley, soils extension specialist at the College of Agriculture, University of Illinois.

Farmers who limed their land years ago, in many cases phosphated it and have been growing clovers regularly in the rotation, have suddenly found that corn has begun to fail. This condition is becoming especially prevalent on some of the older soils of southern Illinois. In some fields the poor corn shows up in spots and in other fields the entire crop is a failure. The soils often are high in fertility, and until recently the cause of the failures has been unknown by the farmers working the land.

With the perfecting of tests for available potassium, or potash, it has been found that most such failures have been caused by a lack of sufficient potassium. Since corn seems to be especially sensitive to this element, it is the first crop to show a need for the mineral.

Soils showing a deficiency of potassium but containing plenty of the other fertility elements will again yield normal corn crops if treated with potash fertilizer. It also has been found that application of manure and straw will help delay the time when lack of potassium becomes serious.

Both manure and straw should be applied before decay and leaching have had time to carry away the potash and other elements of fertility, Linsley said. Return of straw to land that has not grown clover may reduce yields temporarily by tying up the small amount of available nitrogen found in such soils.

While potash deficiencies have not yet become evident to any great extent in northern and central Illinois, some soils are beginning to show a shortage of this mineral. Farmers in these sections can conserve available potassium by careful return of manure and straw to the fields.

Soil testing meetings have been held in a number of counties with farm advisers receiving information on the potassium test. Consequently, farmers interested in having potassium tests made should consult their farm advisers, Linsley said.

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## Farm Folks Take Fowl Worries To Farm And Home Week

Farmers and their wives can take their troubles with them when they go to Farm and Home Week, January 13 to 17, at the College of Agriculture, University of Illinois. At least this will be true in the case of poultry disease troubles. One of the special services of the week will be a poultry disease clinic at which specialists will autopsy chickens, turkeys and other sick fowl brought in by farm flock owners and make recommendations for overcoming the trouble. Birds brought to the clinic should be alive and typically affected with the disease if possible. The clinic will be held at 2 p.m., Monday, January 13, as one of the first events of Farm and Home Week.

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Home Management Skill Leads To Needed Improvements

Home improvements which many Illinois farm women have been putting off will become a reality if they can use their home management to as good an advantage as did Mrs. Lloyd Wolther, of Port Byron, according to Miss Mary L. Chase, assistant state leader in home economics extension at the College of Agriculture, University of Illinois.

Mrs. Wolther recently discovered that she could buy and use an electric range as economically as a gasoline stove during the coming four years, thus conserving the time and energy formerly required to operate a gasoline stove.

While not keeping home accounts at the time of her discovery, Mrs. Wolther had kept track of fuel and repair bills on her gasoline stove. In two years these expenses amounted to about the price of the electric range. Since the minimum electric rate from the power line, recently built to serve the neighborhood, will be high during the next four years, it will cover the cost of operating the electric range at practically no extra cost.

Through her training in homemaking and home account projects, Mrs. Wolther was able to analyze the situation and realize that she could buy the electric range and save almost 50 per cent on her operating expenses during the coming four years. In addition she figured that she could improve the use of her energy and time, since the electric range will require much less time and labor to operate.

It is expected that the high minimum current rate now being charged to cover the cost of building the power line will be reduced at the end of four years. By that time the new stove will be more than paid for and operating expenses are not expected to be much above those of the gasoline stove. Had it not been for her training in home management and account work, she probably would not have considered an electric range within her means, Mrs. Wolther said.

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Prospects Now Put Premium On Early Lamb Production

Prospects are that spring lambs sold early next summer before increased hog marketings tend to push down meat prices will bring the best prices, according to W. G. Kammlade, sheep husbandryman at the College of Agriculture, University of Illinois.

Consequently it is more important than ever to keep ewes that are to lamb early in good condition through the rest of the winter so that their lambs will be vigorous and capable of reaching a prime market condition by early June, he added.

High quality alfalfa hay, clover or soybean hay is the best possible basic feed for pregnant ewes. Each ewe should have from two to two and one-half pounds of this hay daily. Silage, straw or other roughage also should be supplied and, as the ewes approach lambing time, one-half pound of grain should be fed daily. Corn and oats mixed half-and-half make a good grain ration.

If good alfalfa or clover hay is not available, the ewes should receive plenty of silage supplemented by a protein concentrate and some limestone. The concentrate and limestone will supply the protein and calcium ordinarily supplied by the legume hay. Free-choice salt and plenty of clean water should be available for the ewes at all times.

Daily exercise is necessary to keep the ewes in condition and they should be well sheltered especially during damp weather.

Ewes handled in this manner usually drop healthy, vigorous lambs which grow rapidly and are in fine condition at market time. The ewes are less often affected by lambing paralysis and are in shape to supply the lambs with plenty of milk.

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Finished Barrows Or Gilts Best For Home Butchering

Plenty of high quality, economical pork is available during the coming year for Illinois farmers who select smooth, finished gilts or barrows weighing 200 to 225 pounds for butchering this winter, according to Sleeter Bull, associate chief in meats at the College of Agriculture, University of Illinois.

For the best quality pork very fat animals, boars, stags, old sows and piggy gilts should be avoided, Bull added.

One of the first necessities of good butchering is to see that the hog is well bled. This can be assured by proper sticking. Next comes the scalding process which demands careful attention, since water that is too hot may complicate the scraping job by setting the hair. The best water temperature is about 150 degrees. This can be determined by a dairy thermometer or by dipping the hand into the water three times in rapid succession. If the third time is uncomfortable, the water is hot enough.

While the water may be heated in a kettle and poured into a barrel in which the hog is to be scalded, a more convenient method especially where several hogs are to be butchered is to set a small galvanized watering tank on bricks or over a pit with the fire underneath. Then the hogs may be rolled off a scraping platform into the water by means of ropes.

In the scraping, the head and feet are cleaned first. After the hog has been scraped, it should be hoisted on a gambrel stick or cultivator single tree, hot water poured over the carcass and the skin shaved with sharp knives.

The carcass should be cut between the hams down to the pelvic bone and then split down the middle to the breast bone. Care should be taken not to cut the intestines. A cut is then made through the center of the pelvic bone. Then the intestines, stomach and liver can be removed, followed by splitting of the breast bone and removal of heart, lungs, windpipe and gullet. The inside of the carcass should be thoroughly washed and allowed to cool over night before being split down the middle of the backbone with a meat saw. However, the carcass should not be allowed to freeze.

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Winter Parties Raise Popularity Of Full Cooky Jar

Informal parties which will rule many of the crisp winter nights of the next two months place a premium on the well-filled cooky jar, says Mrs. Pearl Janssen of the home economics department at the College of Agriculture, University of Illinois. This is especially true if the jar is filled with a variety of homemade cookies. Two of the most popular of the homemade varieties are pecan finger cookies and Swedish cookies.

The ingredients for pecan finger cookies are  $\frac{1}{2}$  cup of butter,  $\frac{1}{2}$  cup of powdered sugar, 1 cup of cut pecans, 2 cups of flour, 1 tablespoon of water, 1 teaspoon of vanilla,  $\frac{1}{4}$  teaspoon of almond flavoring and  $\frac{1}{8}$  teaspoon of salt. Cream the butter, add powdered sugar, salt, flavoring and water. Then add sifted flour and nuts. Roll in small finger shapes and bake at 300 degrees. After baking roll in powdered sugar. This recipe will make 40 small, crisp cookies which may be kept many weeks if packed in a tightly covered container.

Materials for Swedish cookies are 8 cups of flour,  $1\frac{1}{2}$  cups of sugar,  $1\frac{1}{2}$  pounds of washed butter, 2 eggs beaten stiff and 1 cup of almonds blanched and cut fine. Wash the salt from the butter, cream with sugar, add beaten eggs, flour and almonds, mix well and chill in refrigerator over night. Then run through cookie press and bake at 300 degrees. Color may be added by decorating with colored icing.

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## Farmers Can Now Make Electricity Dreams Come True

Electricity is no longer something for farmers to dream about, but a reality which a farmer can now secure if he wants it badly enough. Rural electrification today must include not only energy for lighting, but also for cooking, refrigeration, water under pressure and various uses about the farm. It is only when complete use is made of electricity that the farmer gets his "juice" at a reasonable cost, and at the same time is an actual asset to the company which serves him.

There are two kinds of service available today, service from central stations and service from unit electric plants. Because of the limited service available and the high cost of operation, the number of unit plants has decreased in Illinois from an estimated 22,756 in 1923 to 14,240 in 1934. Against this figure there were 29,330 farms served by central power stations in 1934. In the United States the number of electrified farms increased from 175,000 in 1925 to 743,954 in 1934.

The interest in rural electrification has been greatly increased during the last few months because of the activities of the Rural Electrification Administration in interesting groups of farmers in securing electric service. This activity has also helped to improve the attitude of the power company officials toward extending electric lines to farms. Cooperation has been emphasized as a basis for getting rural service. Meetings of farm groups have been encouraged to discuss the possibilities of rural electrification and means of financing the lines. Power company representatives who are acquainted with farm-power needs are again interested in extending the service to farms. Furthermore, rates are being reduced. Using national averages for residential rates, one kilowatt hour cost 20 cents in 1883, 14.7 cents in 1900, 7.5 cents in 1925 and 5.5 cents in 1932. At the present time farmers who use considerable power pay less than three cents a kilowatt hour.

There are primarily four problems to be solved in getting electricity to the farm. These are: economic (balancing cost to power company and ability of the farmer to pay); engineering (problem of getting power to farmer and adapting it to his equipment); agricultural (adaptation of electricity to farm operation), and complete electrification (an educational problem of making electricity available for all possible uses).

Electricity today is an investment which repays the customer in increased living comfort, more economical power and actual cash returns for many uses to which it may be applied. The economy of electricity may be judged from the fact that five cents worth of electricity at five cents a kilowatt hour will wash 66 pounds of clothes or separate 2,000 pounds of milk, milk 36 gallons of milk, pump 800 gallons of water from a shallow well, churn 72 pounds of butter, cut one ton of silage or grind 15 bushels of corn.

The answer to the criticism that the farm is being overmechanized is that as long as equipment increases individual efficiency and reduces the cost of production and makes the job easier, it can be justified. Farms are being and will continue to be electrified.--E. W. Lehmann, head, department of agricultural engineering, College of Agriculture, University of Illinois, before annual Farm and Home Week.





"Faddy" Breeding Held Threat To Comeback Of Horses

It is not my purpose to try to convince you that we will have or will need to have a return to the glowing ads of 1906 to 1912 or to the 27 million horses and mules shown in the 1920 census.

It is my opinion, however, with the new "morning" such as we are now experiencing that we are likely to lose sight of the things which have happened and will again happen if people jump into indiscriminate production and careless and "faddy" breeding practices. There has been a great increase in the number of foals produced this year as compared with last, and there will be a still greater number next year and the next and so on until prices begin to break. Economists agree that this will probably be in four or five years.

We should ask ourselves whether these colts of 1935-36 and of future years are going to give us horses better adapted to the needs of the present than were the horses of yesterday. A favorite saying of Will Rogers was: "Things which seem passable today will be ridiculous tomorrow." Will not the horses of tomorrow seem ridiculous if we persist in being carried away with color fads of today, passing everything up for sake of color? True it is that these are days of color and streamlines, and I am not sure but what the streamlines will add to the value of our horses, but not unless these good body lines are carried with their bright colors on underpinning fit to stand the test of time and labor and are driven by adequate lung and heart capacity, executed through the working of abundance of muscles and backed by an adequate middle in which there is a good fuel supply.

Large horses will not be needed in such numbers as they were when the city teaming was done with horses. It seems now that the farm trade is the main one for the future and for this purpose a 1,400- to 1,600-pound horse will be best suited. In attempting to produce to this size, however, the breeder of purebred stock must be especially watchful as he will constantly be tempted to use undersized animals for breeding purposes. A 1,600-pound stallion will not produce 1,600-pound work horses on the average from 1,400- to 1,600-pound mares. The producer of breeding stock must use ton stallions and large mares, 1,700 to 1,800 pounds, if averages are to be kept at 1,400 to 1,600 in work stock.

Another thing, 75 percent or less of our horse breeders are not suited to take the rank of purebred breeder. Just at the present there is a tendency for everyone to jump into the horse business. People who have lost money in other fields during the depression now see an opportunity to make it back by jumping into the horse business with no knowledge whatever of it. Others who have not been successful in other fields are turning toward the horse, and still others who have been money makers in other lines of endeavor see in the horse industry a chance to make more. As a result high prices are being paid. Unfortunately in many cases the animals are inferior.

What I am saying is that if color suits, even though the size be small, the legs inferior, action faulty, blood lines obscure, any or all of these lacking, the price is paid because everybody is doing it.

Down through the years from 1906 to the present, some men have kept at the horse business and made money because they have not persisted in being swayed by fads, they have adhered to the use of good blood lines for the production of good sound, young horses of useful lasting type, they did most of their work with horses and sold a moderate surplus each year before they were ready to die of old age. This program has stood through the years and will continue to stand.--R. S. Hudson, superintendent, department of farm and horses, Michigan State College of Agriculture and Applied Science, East Lansing, before annual Farm and Home Week, College of Agriculture, University of Illinois.



Speedy Cleanup Of Farm Land Tax Delinquencies Urged

Real estate tax delinquency, far from being confined to cities, has become so marked a factor in Illinois agriculture that earnest attention to its removal, possibly as a part of a nation-wide farm program, should not be long delayed. The practice of exempting homesteads from taxation up to a basic figure is being tried out in several states, and before long sufficient experience may have been gained with it to give a basis for study of its various aspects. Limited homestead tax exemption of farm land, if conditioned upon approved utilization of the land, should be of more value in fostering conservational ends than if applied without respect to the long-time interests of the state and nation. While there seems to be no proof in the experience of other states as yet that homestead tax exemption would abolish tax delinquency, wisdom in applying it even temporarily would seem to point toward its use, as one of several definite measures to reduce tax delinquency to pre-depression levels.

There is ground for the setting of 1937 as the final date for the per-mission of delinquency of state or local taxes extending back five or more years, 1938 as a similar final date for taxes extending back three or more years and for providing that in 1939 and after land with taxes in arrears more than two years shall be not only "forfeited" in a bookkeeping sense, but actually taken over as public property. The dates given are merely illustrative. Failure of farm and other incomes to continue in their recovery would naturally suggest a less drastic effort to clear the tax delinquency situation.

Discounts allowed for clean-up payments of back taxes due the state should be provided in such a way as not to exceed the results of a retroactive application of homestead tax exemption. For other unpaid back taxes the discounting privilege should be prevented from abuse. Laxity in the allowance of direct or indirect discounts in excessive amounts can only lead to further willingness of land owners to gamble with the hope of obtaining additional tax concessions in the future.

In some countries farm land is practically exempted from taxation. This is substantially the case in England and Wales. If a state such as Illinois were to place upon payers of income taxes or other taxes the amount of burden that would be needed to cover items of county and local expense as is done in some foreign countries, it would involve a marked redistribution of burdens and benefits. It appears that no American state, even if making extended use of income taxes, has gone as far as England and Wales in exempting productive real estate from taxation. A country dependent on selling at low prices, as is England, may apply tax exemption to productive plants, both urban and rural, in expectation that its processors and producers will cooperate in underbidding foreign competitors in the sale of manufactured goods. Low prices of foodstuffs and agricultural raw materials were conceived to be a part of this international competitive effort and low taxes on productive inventory items in the English farmer's business were essential to that end. Even after the application of the new English schemes for protecting the English farmer from competitive imports of foodstuffs, hops, and other agricultural items, English agriculture has remained largely tax exempt. One consequence has been a material strengthening of land prices.

Of no minor importance in the state tax situation in Illinois is the need for assessment of the land. Regardless of stimulus from the Federal government, the appraisal of farm land in Illinois, should be arranged for so that by 1939, the year for the next quadrennial reassessment for taxing purposes, data for every tract in the state will have been assembled and digested and ratings in money and other terms completed to a point of use in taxation.--C. L. Stewart, chief in land economics, College of Agriculture, University of Illinois, before annual Farm and Home Week.

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# The Extension Messenger

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Number 5

## Good Farming To Net Most From Increased Cash Income

Just as they weathered the depression better, good farmers will be in the strongest position to make the most of recent increases in the cash income of agriculture, judging from farm management studies of the College of Agriculture, University of Illinois.

The 1935 estimated cash income of U. S. farmers from sales plus rental and benefit payments is \$6,932,000,000 as compared with \$6,387,000,000 in 1934 and \$4,328,000,000 in 1932, the low year of the depression.

Ordinarily, those things which go to make up a good standard of living may be purchased with the income from the ordinary corn belt farm, provided pre-war prices prevail, good farming practices are followed, reasonable care is used in spending the family income and the value of the land is not maintained at too high a level, according to M. L. Mosher, of the department of agricultural economics, College of Agriculture, University of Illinois.

Even during the past ten years, a few of the most profitably-operated Illinois farms provided income enough to maintain a good standard of living for the farm family. They also provided something for investment and for the living in comfort of the older people after they had retired. Only those who were the most efficient and who were operating farms under the most favorable circumstances were able to do this during the depression years.

Some of the more important things necessary in order to make the farm bring in income enough for such a standard of living are: (1) The development of a large enough business that if efficiently handled will bring in net income enough for the family living; (2) the planning of a satisfactory rotation of crops and field arrangement; (3) the keeping of the kinds and amounts of livestock that are best suited to the farm, the farmer and his market; (4) the producing of high yields of crops by giving attention to soil fertility, soil erosion, cultivation and seed; (5) by efficient handling of livestock, by the use of good quality breeding stock, keeping livestock healthy, feeding a balanced ration of home-grown feed as far as possible and giving attention to the marketing of the livestock or livestock products; (6) keeping labor costs low in proportion to income by a careful selection of crops, field arrangements and the fitting of the livestock enterprise in with the crop production enterprise; (7) the keeping of power and machinery and livestock equipment costs low in proportion to income; (8) the keeping of building and fencing costs low in proportion to income by conservative investment in building and fences and by careful maintenance of them; (9) securing good prices for products sold by producing products of good quality, by putting products on the market at the time of year when prices are usually best, by cooperating with others in the adjustment of the production of staple crops and by cooperating with others in the transportation, processing and selling of some products.

It is those farmers who have done each of the things named with average or better than average efficiency who are able to maintain a good standard of living, provide for the rainy day and take care of the elderly people.

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Farmers Buying New Machines Find Many Developments

Many new developments in field machinery await Illinois farmers as they go back into the market to buy new tools or needed replacements that they have been getting along without during the years of reduced income, according to R. I. Shawl, of the department of agricultural engineering, College of Agriculture, University of Illinois.

Farm machinery and tractor sales were higher in 1935 than in any year since 1930, and a further increase is expected in 1936, according to the college's recent agricultural outlook report for Illinois.

One distinct development is the much greater strength which manufacturers have had to build into tractor-operated machines in order to make them withstand the increased speed put into farm tractors through the use of rubber tires. Wheels on plows and other tractor-drawn machinery have been greatly strengthened, and in some cases rubber tires have been used to lessen the danger of broken parts. The buyer should be sure that the new machines which he buys for tractor use have the strength of construction necessary for long service.

Machines have been strengthened and at the same time lightened by the use of rolled steel plates in the place of many cast iron parts and by the use of welded joints in place of bolts or rivets. The addition of alloys to metals and the heat treatment of metals have greatly increased their strength and wearing ability.

Fundamental principles of design in field machinery have not undergone much change, but machines have been improved through greater perfection of their various parts and by combining the desirable features of several machines into a machine that is more serviceable.

The use of galvanized sheet metal has just begun to replace the wood boxes on grain drills and manure spreaders, thus making these machines more weather proof.

Plow bottoms have been made wider to give better trash coverage and their shape has been changed to allow plowing at speeds of four to five miles an hour instead of three miles an hour for the standard type of plow bottoms.

There is a general trend on the part of manufacturers to build implements for general-purpose tractors of the quick detachable type. But if the implement is not quickly detachable, provision should be made for using the tractor drawbar without removing the implement.

Enclosed gear mowers now being built by many manufacturers eliminate most of the lubricating problems of the mower and add greatly to its length of life. Lespedez or fairway cutter bars for mowers provide for cutting much closer to the ground than is possible with the regular type of cutter bar. A newly designed guard on one make of mower helps to prevent the clogging of the cutter bar with grass. The vertical lift and tongue truck are valuable additions to a mower.

The Wheatland disk, or one-way disk plow, still unknown in many sections of the state, is gradually coming into use in the wheat and soybean area. This implement mixed the trash quite evenly through the soil. Many farmers consider this a very desirable practice.

The field cultivator, or duckfoot cultivator, is proving to be an excellent implement for the control of Canada thistle, quack grass and all types of weeds. It is used chiefly in the northern part of the state, but machinery companies feel that it has a place on most types of farms.

The small grain combine harvester put on the market for the first time this past year has created a great deal of interest. The work of this machine indicates strongly that it is here to stay. Farmers are anxious to have a small low-priced combine that will do the work of the grain binder and threshing machine.





Belief That Illinois Soils Rich In Potash Disproved

The old belief that Illinois soils contained plenty of potash which could be made available by proper farming methods has now been definitely discarded. Much of the potash in our soils is "inexhaustible" only because it is so tightly locked up that the plants can not obtain it in amounts sufficient for good growth. No system of farming or treatment practice is known which will markedly affect the yearly rate at which potash becomes available to crops. Potash deficiencies are showing up more and more in the last few years. It is predicted that certain soil areas of the state not now considered generally deficient will become so within a short period. The deficient, partially deficient and non-deficient areas have been mapped out for the whole state. This map which will soon be available will show those areas in which potash deficiencies should be looked for. The suspicion that the Illinois system of agriculture was to blame for these potash deficiencies has been definitely put down. It is not the system of agriculture, but the soils themselves which are at fault.

The use of potash is inevitable on most of the southern and southwestern soil areas if good crops are desired. Potash applications can be avoided only by being satisfied with low crop yields or by returning in the form of manure practically all of the crop taken off.

Use of potash fertilizers or return of manure where possible on deficient and partially-deficient soils where other factors are not lacking should be encouraged. Many farmers, not understanding their potash deficiency, have decided to let well limed and phosphated land revert to pasture or weeds, whereas the use of a little potash would make those fields the richest on their farm.

Liming the soil helps conserve the available potash against leaching and yet does not interfere with the crops' ability to take it up.--R. H. Bray, Assistant Chief, Soil Survey Analysis, College of Agriculture, University of Illinois.

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No One Variety Of Fruit Is Best Adapted To All Uses

Proper selection of tree fruit varieties for the home should be considered before trees are ordered from the nursery. A single variety of fruit is generally not adapted to all uses. Apple varieties, for instance, can be selected so that fresh fruit can be harvested from early summer until late fall or early winter. The same is true to a certain extent with the peach, pear and plum. Generally speaking, the earlier-ripening varieties are not well adapted for storage and do not give as high a quality canned fruit as do some of the later-ripening varieties. Such being the case, enough of the late-ripening varieties should be planted to give fruit both for storage, canning, making of preserves, jellies and jams. It is also true that with the apple varieties, some are noted for the high-quality pies which can be made from them. Others are useful for eating in the raw condition, while others are useful for packing and other culinary purposes.

With the peach not as marked variations will be found as with the apple. There are differences, however, which would warrant a selection of varieties which would give a good canning product and also those for eating in the fresh condition.--R. L. McKinn, Associate in Pomology, College of Agriculture, University of Illinois.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
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Number 6

## Sanitation Is Boon To Prospects For 1936 Apple Crop

Illinois' apple crop, averaging almost  $2\frac{1}{2}$  million dollars a year to date, apparently has weathered the record cold snaps in good shape. Prospects which growers now have can be protected through strict orchard sanitation to keep down injury that otherwise would be done by a score of insects, diseases and rodents, according to a new circular just issued by the College of Agriculture, University of Illinois.

The new aid to lower cost production of higher quality fruit, "Practical Sanitation for Apple Orchards," was compiled by M. D. Farrar and S. C. Chandler, entomologists of the Illinois State Natural History Survey, and H. W. Anderson and V. W. Kelley, of the college's division of pomology.

Millions of dollars now spent for spray materials to control orchard insects and diseases may be wasted or only partially effective unless backed up by sound orchard sanitation, the circular points out.

Orchard sanitation starts with pruning and should include the cutting out of all dead twigs and limbs, split branches, punky wood, cankers and old pruning stubs, the authors say. Pruning should be done closely and smoothly, and the larger wounds covered with wood-preserving paint. All prunings should be collected and burned.

Scraping away the rough bark of old trees, followed by the burning of all scrapings, also is recommended. Placing chemically-treated bands on trunks of scraped trees aids sanitation by corralling codling-moth larvae.

Keeping orchards free of excessive weeds, avoiding coarse mulching materials and clipping cover crops to prevent rank stem growth are further boons to sanitation.

Cleaning up debris of all kinds and removing all diseased and cull fruit promptly can not be neglected if the toll of insects and diseases is to be kept down, the circular points out.

Two additional planks in orchard sanitation are the screening of packing sheds so that they will be tight against codling moths and the dipping of all orchard crates now kept in screened sheds in order to destroy larvae.

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## "Bread-Line" Mice Riddle Orchards In Severe Winter

Snow and the record cold weather of this winter have put field mice into the "bread line," with consequent serious threats to fruit trees of the state, it is reported by G. C. Oderkirk, of the U. S. Biological Survey. With their supplies of other food cut off, the mice have turned to the bark of fruit trees, causing widespread damage, according to Oderkirk, who is cooperating with the Illinois State Natural History Survey and the College of Agriculture, University of Illinois.

Within the past few weeks reports from a number of fruit growers indicate severe damage is being done by field mice in some orchards, Oderkirk said.

Other orchards undoubtedly are being damaged without the owners knowing it, he added. Close examination of orchards is recommended, with poisoned bait being used to destroy the mice if they are abundant.

"From now until April is the period when mice usually cause severe injury, principally to apple, cherry and pear trees. Good baits may be mixed according to formulas in U. S. Farmers' Bulletin No. 1397, available at any farm adviser's office. Ready mixed baits may be purchased at cost through the U. S. Biological Survey headquarters at Lafayette, Ind.



Early Treatment Of Oats Cheapens Prevention Of Smut

First sign of spring: Preparations for oats seeding and a report from Benjamin Koehler, crop pathologist of the College of Agriculture, University of Illinois, that farmers can save half the cost of disinfecting their seed against smut by treating it two to six weeks before seeding.

Although the state is still shivering from the effects of the winter's record cold weather, it is none too early to begin preparations for oats seeding, Koehler pointed out. More than a third of the oats in Illinois is planted in March, and that is only a month away, he said. Treating seed two to six weeks ahead means that preparations must start now.

Much of the three or four million acres of oats seeded in the state this spring will be planted to seed treated with the new improved ceresan, a preventive of smut damage to yield and quality, he predicted. This disinfectant, available at most seed stores, is a dry chemical dust which acts both by contact and as a gas. If the treatments are made early and the treated grain allowed to stand in sacks or in a bin covered with canvas or blankets, the gas has longer time to act and thus less disinfectant is needed, Koehler explained.

"The usual recommended dose, one-half ounce a bushel, should be used when the oats are stored only 24 hours before seeding. It is false to think that if a little disinfectant is good, more will be better. An excess weakens germination of the seed, and this is followed by a little loss in yield of grain.

"In well-cleaned grain one-fourth ounce of disinfectant to the bushel of seed, mixed well and allowed to stand for two or more weeks before seeding has given as good control of smut as one-half ounce a bushel allowed to act only 24 hours.

"Another factor affecting the dosage needed is the amount of dirt in the oats. If the seed has much fine, dusty dirt in it and it is not being recleaned before the disinfectant is applied, a full one-half ounce of the chemical to the bushel may be needed even though the oats are stored for some time before seeding.

"Thorough mixing of the disinfectant with the grain is essential for best results in any case. Mixing done with a good machine gives more reliable results than that done with a scoop shovel.

"By cleaning and treating his seed and keeping in mind the length of time the oats will be stored after treating and before sowing, then adjusting the dosage of the disinfectant accordingly, the farmer not only will save money on disinfectant, but also will assure the best yields of grain."

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Growers Seeking Methods To Make Most Of Tomato Crop

How farmers and gardeners can keep pace with the recent marked expansion in the growing of tomatoes for canning, soup and juice will be a leading topic during two vegetable growers' schools which the College of Agriculture, University of Illinois will hold in Cook county.

The first of the schools is to be held February 11 and 12 at the St. Matthew's School Hall, on Milwaukee avenue, a half mile north of Dempster street and four miles east of Des Plaines. The second school is to be held at the Cook County Farm Bureau hall, 2414-16 West Grove street, Blue Island, on February 12 and 13.

Featured along with tomato growing problems will be the control of diseases of cabbage and cauliflower. Dr. L. M. Blank, plant pathologist of the College of Agriculture, University of Wisconsin, Madison, and of the U. S. Department of Agriculture, who will give an illustrated lecture on cabbage and cauliflower diseases, will be the guest speaker of this year's schools.

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Mortality Loss Blights Outlook For Poultry Raisers

Although the outlook for poultry and eggs is mostly favorable during the first half of the year, heavy mortality losses still loom as a threat to the state's poultry industry, according to H. H. Alp, poultry extension specialist of the College of Agriculture, University of Illinois.

Some flock owners in the state last year lost as high as 47 per cent of their mature flocks, and there will be ruinous losses again this season unless poultrymen adopt more stringent methods than they have used in the past, he said.

The drive against poultry mortality losses might well start with greater alertness on the part of flock owners in detecting birds out of condition, in destroying and removing quickly from the pen all sick birds and in a real appreciation of cleanliness, Alp said.

"Certainly drugs and so-called remedies have failed to solve the problem, much as they have been used.

"There is too much 'doctoring' of sick chickens and not enough clean feeders, waterers and houses. It is useless, of course, to clean the droppings board and leave a side rail to a feeder or waterer filthy dirty. Dirt around the feed and water helps to give the birds every possible chance of thorough exposure to any disease or parasite present.

"Faulty sanitation or flock management is probably not wholly responsible for heavy mortality losses now being suffered by Illinois flock owners. There is considerable evidence that certain strains of poultry may be lacking in vitality. Future breeding may need to be done more with two-year-old stock and less with yearlings. More consideration might well be given to the effect of breeding on mortality."

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Lambing Season Opening With Early Lambs Promising

Lambing season is opening in Illinois this year with market conditions favoring those farmers who produce early spring lambs, feed them liberally and market them in May or June, according to E. T. Robbins, livestock extension specialist of the College of Agriculture, University of Illinois.

Fat lamb prices are now good, having advanced in late 1935 to the highest point in the past five years, Robbins pointed out. Furthermore the number of range lambs now on feed is smaller than usual.

"This combination promises that the first of the 1936 crop of lambs should find a ready and profitable market.

"A rugged February or early March lamb which is fed grain from the start can be sold weighing 70 to 80 pounds around June 1, a season when the market is strong. Ground corn, oats and a little bran and linseed oil meal make a good starting ration. Later on the lambs may be changed to shelled corn. Good legume hay, preferably alfalfa, should be fed, too. It is best to feed the lambs in a small pen equipped with a 'creep' to keep out the ewes.

"Lambs handled in this way are not affected by stomach worms, they are exposed to a minimum of risk from dogs, are sold before hot weather checks their growth and provide quick cash income. Usually they sell for more dollars a lamb than they ever would bring in later months of the year."

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
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## County Committees Busy Framing Farm-Home Programs

A force of 2,000 farmers and homemakers is now at work throughout Illinois on the first phases of a new undertaking to build an extension program for agriculture and homemaking in each of the 102 counties of the state, it is announced by Dean H. W. Mumford, of the College of Agriculture, University of Illinois and director of the agricultural extension service.

Making up the corps of 2,000 is a committee appointed for each county of the state by Director Mumford and working in cooperation with the local county farm and home advisers. Through the work of these committees there will be set up in every county a coordinated farm and home educational program which will have for its purpose the advancement of the economic and social welfare of Illinois farmers, farm homemakers and their families.

The new undertaking is a continuation of program coordination which has been in progress in Illinois for a number of years but which was interrupted by various emergency activities that have come up since the spring of 1933. Both the national planning and the national discussion group projects being launched by the U. S. Department of Agriculture are incorporated as a part of the county project.

In keeping with this, the functions of the county committees will be to encourage more interest and participation by farm people in group discussions of their problems, to analyze available facts regarding farm and home conditions in their own counties, to outline an educational program based on these facts and to make the necessary arrangements for carrying out such a program.

Within the next few weeks representatives from the extension service of the agricultural college, serving as supervisors for the different farming-type areas of the state, will visit their respective counties to confer with the committees and assist them in getting their work started.

For each area there are two, and sometimes three, supervisors, one a representative of agriculture and the others of home economics. The teams include J. D. Bilsborrow and Miss Cleo Fitzsimmons, C. S. Rhode and Miss Martha Hensley, D. E. Lindstrom and Mrs. Kathryn Van Aken Burns, J. B. Cunningham and Miss Mary Louise Chase, E. T. Robbins and Miss Lulu S. Black and Miss Edna Walls, P. E. Johnston and Mrs. Ruth Crawford Freeman, R. C. Hay and Miss Grace B. Armstrong and Miss Fannie M. Brooks, J. C. Hackleman and Miss Dorothy Iwig, C. M. Linsley and Miss Edna R. Gray, F. E. Longnair and Miss Gladys J. Ward, H. H. Alp and Miss Erma Cottingham, V. E. Kelley and Miss Glenna A. Henderson.

As a basis for the deliberations of the county committees, booklets of information have been prepared pertaining to farm, home and community in each of the areas. These contain facts and statistics on all phases of rural living from farm population and land use to health and education.

Behind the committees and their work is a three-fold purpose: (1) To give them an opportunity of formulating an effective and comprehensive county agricultural and home economics improvement program, one which deals with the general welfare of farm families within the county; (2) to sponsor or encourage organized group discussion on current farm and farm family problems with the hope that they will help to make for a well-informed rural people and prevent loose and radical thinking, and (3) to provide the U. S. Department of Agriculture with certain county agricultural facts which may be of value to the federal department in providing future aids to American Agriculture.

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Increased Liming Places Premium On Growing Legumes

Revival of limestone spreading on Illinois farms during the coming year will pay extra dividends if farmers will use more legumes on the limed soil, according to L. B. Miller, associate in soil experiment fields at the College of Agriculture, University of Illinois.

On one of the college's soil experiment fields the fertility level of limed land was raised an extra 50 per cent through the use of legumes, he reported.

A more normal rate of limestone use is expected to be resumed in Illinois this year as a result of the improvement in farm income, Miller said. Some eight million tons have been used on farms of the state since the practice was first introduced by the agricultural college, but during the depression years tonnage fell off.

In addition to adding organic matter to limed soil and raising its general fertility level in that way, a catch crop of clover or other legumes lessens leaching losses and cuts down erosion damage, Miller said. The direct benefit of limestone to grain crops is relatively small. Full returns from liming can not be had without the frequent and regular use of legumes in the cropping system.

"This is shown by results on the Carlinville experiment field in Macoupin county. Since 1921 a two-year rotation of corn and wheat has been grown on land which received five tons of limestone an acre. Prior to treatment this land was medium acid, typical of the level soils of that section.

"On one portion of the limed area sweet clover was seeded each year as a catch crop in the wheat and plowed down the following spring for corn. An adjacent area, although limed, has been cropped with corn and wheat in the same way, but without the use of sweet clover.

"Yields have averaged 22 bushels of wheat an acre and 47 bushels of corn in the rotation where sweet clover has been used as a catch crop. In contrast wheat made only 13 bushels an acre and corn only 34 bushels in the rotation where no legumes were used. In other words the clover improved the fertility level of the soil 50 per cent.

"Here is evidence that the farmer who has gone to the trouble and expense of liming his soil is cheating himself if he does not plan a regular rotation including clover which will save and make the most of his investment in limestone."

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Delayed Pruning Of Grapes Helps Offset Cold Damage

Certain varieties among Illinois' two million grape vines have been so hard hit by the severe winter that pruning this spring should be delayed until the full extent of the damage can be told and the vines pruned accordingly, it is pointed out by A. S. Colby, chief in small fruit culture at the College of Agriculture, University of Illinois.

Any vines on which the fruit buds have not been killed, if properly pruned, can be made to yield twice what they otherwise would, he said.

"The grower should look upon his vines as separate individuals and after allowing for gradations in vigor resulting from insects and diseases, soil differences and weather conditions should handle the vines in such a way that vine growth and yield of well-matured clusters are balanced yearly."

Results of the station's studies with Concord grapes showed that if most of last season's shoots were too short and too weak to produce laterals, the vine was pruned too lightly the previous season. That is, too many nodes were left. If the shoots were so vigorous that they produced an excessive amount of lateral growth, too many nodes had been removed the previous winter.

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Pig "Nurseries" Come To Front With Hog Supplies Low

With far less than the usual number of hogs in sight for slaughter in 1936, pig "nurseries" may be the source of extra cash for many an Illinois farmer this season, according to W. E. Carroll, chief in swine husbandry at the College of Agriculture, University of Illinois.

Such nurseries, which bridge the critical period between the time early spring pigs are farrowed and the time that they can be put on clean pasture, may be the means of saving hundreds of little pigs which otherwise would be lost from roundworms, diseases or injuries, Carroll pointed out. These nurseries, developed as a practical necessity on the agricultural college farm, are an important supplement to the McLean county system of swine sanitation, long-recognized as a boon in hog raising.

"A small lot near the barn or in some other convenient place can be used for the nursery. Covering the area with cinders or gravel will prevent too much mud in a wet spring. If the soil is porous and the drainage good, no cover at all may be needed.

"On the college farm the individual houses for the sows and their litters were placed on the lot in two rows. Around each house a 14 by 16 foot pen was made with loose hurdles. Since the nursery is for early spring use, the houses are set to take full advantage of the sunlight. Dividing the area into separate pens for each sow and litter is not strictly essential to the operation of the nursery. However, individual quarters during the first few weeks do save the lives of many pigs and may be justified on that basis.

"Sows and their litters are moved to the nursery as farrowing pens in the barn are taken over by sows yet to farrow. The pigs can be held on the area until pasture is ready, if suitable feeds are used. On the college farm the pigs have been kept in the nursery until they were weaned.

"One advantage of the nursery idea is that young pigs on such a lot do not develop milk anemia as they do if kept on a paved area or a barn floor."

Success of the nursery system depends upon practicing a number of precautions, Carroll pointed out. The area should be so located that drainage from other hog lots can not run over it and it should be used for no other purpose beside the nursery. Other livestock should be kept off it throughout the year. Individual houses should be scalded thoroughly with boiling lye water each time before they are returned to the nursery area. The pigs, with the sows, should be moved to pasture as soon as possible. The sows should be prevented from rooting up the soil of the lot. The area should be dragged and kept free of weeds during the summer so that the direct rays of the sun can work on any worm eggs left in the lot by the sows.

One of the worst winters that Illinois has had in many years threatens to take an unusually heavy toll in weak spring pigs, according to E. T. Robbins, livestock extension specialist of the College of Agriculture, University of Illinois. During the long-continued cold, snowy weather brood sows have been getting less exercise and less variety of feed, he reported.

Forcing sows to take exercise and feeding them alfalfa hay will prevent what might otherwise be heavy losses in weak litters, he said. There is an extra premium on good management of this kind this year because the number of hogs in sight for slaughter in 1936 is much lower than normal, he pointed out.



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## Seed Worries Are Now Dominant In Outlook For Corn

Threats of a serious seed corn situation, brought on by record freezes, dominate the outlook situation for corn, Illinois' major crop, as farmers look forward to the new planting season, according to officials of the College of Agriculture, University of Illinois.

Earlier in the season, before the record winter had taken its toll in seed, a slightly increased acreage of corn was in prospect for the country, given normal weather conditions in the spring. How much the seed corn situation in Illinois and other states will alter this prospect is not yet known.

Likewise the full extent of the chinch bug threat can not be measured until a more accurate check-up can be made of what the record winter has done to these pests.

One of the relatively new outlets for corn as Illinois farmers plan their 1936 acreages is the distilled spirits industry, which used more than 19 million bushels, or about four-fifths of 1 per cent of the crop, in 1934-35 and promises some additional, although not large, increase in 1935-36.

This year's corn crop will follow a domestic harvest of 2,211 million bushels in 1935, which was about 86 per cent of the 1928-32 average. The increase of 834 millions over 1934 production was partly the result of an increase in acreage but more so of better acre yields.

Last year Illinois increased its corn acreage over that in 1934 by about one-half per cent, but the 1935 acreage was still 17 per cent less than the 1928-32 average. The 1935 production of corn in Illinois was 137 million bushels more than the low harvest of 1934, but more than 45 million bushels less than the 1928-32 five-year average.

Weighing heavily in advance plans for this year's corn crop is the fact that feed supplies and the number of farm animals are now in the best balance in several years. With no more livestock than there are now and with normal yields from an acreage of corn as large as last year's, there might easily be a surplus of corn and the danger of low prices, it was said.

Plans for this year's corn crop are affected somewhat by the fact that although the quality of the 1935 harvest was generally good, the crop was poor in some sections of the country. Soft corn must necessarily be utilized for feed or otherwise consumed before warm spring weather. Furthermore it will have to be fed heavier than sound corn to produce the same result.

As far as seed for this year's crop is concerned, only farmers who selected early and stored their supply properly are on the safe side. Corn that is still in cribs and that contained as much as 20 per cent moisture has practically all been made worthless for seed, in the opinion of J. C. Hackleman, crops extension specialist of the college. Hence farmers who are still following the all-too common practice of selecting their seed corn from the crib at this time of the year will be especially hard hit, he said.

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Lime And Legumes Are Sound Basis For Soil Programs

Seventy-five cents an acre a year for limestone, coupled with legumes, will do more for Illinois' declining wheat belt soils than all the mineral fertilizers that can be applied at more than double that cost, according to results of experiments cited by L. B. Miller, associate in soil experiment fields at the College of Agriculture, University of Illinois.

Results of the tests are of special significance to the eastern portion of the state's southern wheat belt, where soils are becoming so depleted that wheat growing without fertilization is unprofitable or rapidly becoming so, Miller said.

The lime-legume combination insures more fertile soils and more stable production, while straight mineral fertilization can lead only to soil depletion, erosion and costly and uncertain yields, it was pointed out. Already weakened soils, if made to produce heavier yields of wheat through mineral fertilization, will rapidly be further depleted through losses of organic matter and nitrogen, it was explained.

Two adjacent fields in Effingham county produced the evidence establishing the worth of the lime-legume treatment. The fields were located on the same soil types and were very similar in producing power until one of them was limed about 15 years ago. Since then several seedings of sweet clover have been made on the limed field and a small amount of manure has been applied to it. The other field has been untreated except for a light application of manure. It has regularly grown corn and grain crops.

Fertilizer was drilled with the wheat in both fields in the fall of 1934. Across both fields unfertilized check strips were left to measure the benefits of the treatment.

Those unfertilized check strips on the unlimed land made only 5.9 bushels an acre, while the unfertilized strips on the limed land made 21.6 bushels an acre. Fertilized land on the unlimed field could produce no more than 21.6 bushels an acre, exactly the yield from the unfertilized strips on the limed soil. On the limed field the fertilizer treatments gave considerably smaller responses than they did on the poor soil. With some fertilizer treatments there was injury from lodging on the good field.

In the limed field the yield of 21.6 bushels of wheat an acre was obtained at a cost of five tons of limestone an acre applied 15 years ago, or an annual cost of one-third of a ton of limestone. The field still produced a good sweet clover crop in 1934, although the soil tested slightly sour.

The use of clover has added to the nitrogen and organic matter in the soil and thereby directly increased its general fertility level. Indirectly the extra nitrogen and organic matter will make the field a larger producing unit and hence capable of supplying more roughage which could contribute to the manure supply of the farm.

In contrast the yield of 21.6 bushels of wheat an acre on the unlimed field was obtained at the price of the equivalent of 125 pounds an acre of superphosphate costing about \$28 a ton, or \$1.75 an acre. Although this treatment was profitable in the case of the 1935 wheat crop, it can not be credited with making the poor field equal to the limed one. As a matter of fact the poor field if made to produce high yields of wheat in this way will rapidly be depleted through losses of organic matter and nitrogen and will gradually become less productive, Miller said.





Large Hay Supply Tempers Winter For Farm Livestock

Horses and the millions of other livestock on Illinois farms need not suffer from lack of hay during the record cold of the winter, according to stockmen of the College of Agriculture, University of Illinois. Hay supplies for each animal unit are high compared with the supply for the past five years, they said.

Soybean hay, more plentiful as a result of the marked increase in the acreage of this crop during recent years, can be used to good advantage for the 860,000 horses and mules in the state, it is pointed out by E. T. Robbins, livestock extension specialist of the college. Horses subsisting entirely upon stalk fields and straw stacks in a winter such as Illinois has been having may well be given a small allowance of soybean hay each evening, he recommended.

On some farms soybean hay has been the principal roughage for horses for 20 years or more. In many cases soybean hay has been the only kind used for several years, Robbins said.

"Soybean hay that was fairly mature when cut seems to be the best, in the opinion of experienced horsemen. It should be fed in moderate amounts so that the horses will clean up all but the coarsest stems. If too much soybean hay is fed, a horse may get so many beans as to cause undue laxativeness from too much oil.

"Soybean hay is just as good for horses when they are working as when they are idle. Brood mares and colts also thrive on it. The hay is high in protein and thus helps to balance the roughages which are low in this respect. When horses are working hard, corn is the only grain fed on some farms using soybean hay. On other farms some oats also are fed. In either case the results are good."

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McLean County Most Outstanding In Girls' 4-H Clubs

Most outstanding of all Illinois' 102 counties in girls' 4-H club activities in 1935 was McLean county, according to an announcement by Miss Mary A. McKee, girls' 4-H club specialist of the College of Agriculture, University of Illinois. A new county recognition score-card system used for the first time during the past year put McLean at the head of the list with a score of 2,037. The rating was on 34 items relating to organization, leadership, county committees and activities of girls' 4-H clubs in the various counties.

McLean outscored 97 other counties in which a total of approximately 12,000 girls are carrying on definite 4-H projects in better homemaking practices under supervision of their county advisers and the extension service of the College of Agriculture, University of Illinois.

Second in the rating was Marshall-Putnam county with a score of 1,919, while Shelby was third with 1,802 points. In a class B group of counties Cook was first with 1,764, McHenry second with 1,752 and LaSalle third with 1,657. Macon county was first in class C with 1,588, Livingston second with 1,579 and Vermilion third with 1,511.

County advisers from the nine counties, presidents of the farm or home bureaus, leaders and representatives of the 4-H members in these counties will be recognized in special ceremonies being planned for the annual 4-H club tour to be held this summer at the university.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
Experiment Station, and Extension Service

Volume XIX

February 26, 1936

Number 2

## Search For Safe Seed Corn Reveals Serious Scarcity

Disappointing results are being reported by Illinois farmers as they widen their search for sound seed corn to stave off what threatens to be a scarcity as bad as the one in 1918, according to J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois.

Supplies of safe seed from the 1935 crop are proving so rare that some growers already are turning to the remains of the 1934 crop in the hope of finding something that will grow after the record freezes of this winter.

Experiences of John T. Smith, Tolono, are cited as typical of the disappointing search which farmers all over the state are now making for seed corn. In a check-up of selected cribs within five miles of his own farm, Smith found only two cribs out of eight that were worth working as a source of seed for this spring's planting.

All this was corn that had been planted on time in the spring of 1935 and that was the most nearly mature of any in the neighborhood when the freezes came last fall. Consequently it probably was above the average for all farms, Hackleman said.

Corn in one of the two cribs that was believed fit for seed germinated only 70 per cent and that in the other only 84 per cent, Smith reported. Unfortunately there were only about 200 bushels in the crib testing 84 per cent.

"If it can be found, good old corn of the 1934 crop can be safely used for seed," Hackleman said. "Unfortunately, however, 1934 corn is pretty well used up because of the short crop that year. If old corn is used, it should be treated for disease and then not planted until the ground has had a chance to get thoroughly warmed up. Otherwise the results from old seed may be disappointing."

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## Pasture Demonstrations To Speed Control Of Erosion

Better control of erosion through improvement and expansion of Illinois'  $7\frac{1}{2}$  million acres of pasture land will be sought in 37 demonstrations to be established this season by the U. S. Soil Conservation Service and the College of Agriculture, University of Illinois, it was announced here today.

Pasture problems on actual farms of cooperating farmers will be attacked in the demonstrations, which will be located at 18 different points in the state in connection with CCC camp and project areas of the soil conservation service.

The demonstrations will include: (1) Adequate pasture for all livestock over a long seasonal grazing period; (2) supplemental grazing when needed during the dry summer months; (3) alternate grazing where fencing costs, water supply and other conditions permit; (4) swine forage other than permanent bluegrass, especially on seriously-eroded pastures or on those subject to serious erosion; (5) weed-free pastures by proper and timely clipping of weeds, and (6) fertilization of pastures with lime and phosphate where these are needed.

The 18 points at which the demonstrations are to be established under present tentative plans are Freeport, Mt. Carroll, Galva, Aledo, Congerville, LeRoy, Havana, Rushville, Pittsfield, Jacksonville, Decatur, Carlinville, Edwardsville, Greenville, Charleston, Sparta, Murphysboro and Grayville.





Wide Range In Soils Complicates Job Of Conservation

Present national emphasis upon soil conservation has focused attention upon the fact that in a state like Illinois the problem involves not one but 175 different types of soil, each with its own peculiarities and limitations, according to soils specialists of the College of Agriculture, University of Illinois.

These 175 types have been divided into 10 grades, no one of which covers more than a sixth of the area of the state. This is a marked contradiction of the false belief still held by some that Illinois is uniformly blanketed with soils of high fertility.

Each of the 175 soil types has been recognized, named and described by the agricultural college in its survey and mapping of the soils of the entire state.

On the basis of 10 grades covering all ranges of productivity, only 7 per cent of the soils of the state are in Grade 1. Soils in this grade are such that in the east central Illinois cash grain area, for instance, they would support rotations made up of 55 per cent corn, 30 per cent spring grain, 5 per cent winter wheat, 5 per cent soybeans,  $2\frac{1}{2}$  per cent legume hay and pasture and  $2\frac{1}{2}$  per cent other hay and pasture. At the other extreme Grade 10 soils are such that in the east central Illinois cash grain area they will support rotations containing only 20 per cent corn, 25 per cent spring grain, 10 per cent winter wheat, 15 per cent soybean hay and grain, 20 per cent legumes and pasture and 10 per cent other hay and pasture.

This Grade 10 takes in slightly more than 14 per cent of all the soils in the state.

The predominating grade of soil in the state is Grade 5, about midway between 1 and 10 in productivity. This Grade 5 takes in 16.6 per cent of all the soils in the state. Next comes Grade 10 with its 14.1 per cent of all the soils in the state. Almost  $13\frac{1}{2}$  per cent of all the state's soils are in Grade 3, 10.4 per cent in Grade 8, 10.4 per cent in Grade 2, 8.1 per cent in Grade 7, 7 per cent in Grade 1, 6.6 per cent in Grade 4, 6.6 per cent in Grade 6 and 5.9 per cent in Grade 9. The remaining nine-tenths of 1 per cent of the soil area of the state is in water, strip mines and gravel pits.

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Eighty-Six Dairymen Qualify For Coveted Gold Medal

Eighty-six dairymen qualified for the official gold medal of the Illinois 500-Pound Cow Club during the past year by getting a production of 500 or more pounds of butterfat out of one or more cows in their herds. The list of winners was announced today by Prof. C. S. Rhode, of the dairy department, College of Agriculture, University of Illinois, following the tabulation of the year's record. In all there were 154 "super" cows that met the requirements of the club, some of the dairymen having as many as 16 of the 500 pounders in their herds.

Leading the field of winners was a purebred Holstein in the herd of Mooseheart Dairy, Mooseheart, that finished the year with a record of 23,329 pounds of milk and 824 pounds of butterfat, 324 more than the minimum requirements of the club.

Sponsored for a number of years by the extension service of the agricultural college to encourage more efficient dairying, the club has a double purpose. It seeks to locate and recognize persistent high producers among the state's dairy cattle and at the same time demonstrate the worth of improved methods in making dairying more efficient and more profitable.

Kane county distinguished itself as the state's center of good dairy cows when 29 animals owned by dairymen in that county met the requirements of the club. McHenry, Tazewell, Moultrie and Stephenson counties each placed nine cows in the club while McLean county landed eight.

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Farmers Speed Liming Program By Using Stock Truck

With three-fourths of a million tons of limestone needed to sweeten their acid soils so they will grow legumes, farmers in Richland county have pressed into use a livestock shipping association truck to help solve the problem, according to C. M. Linsley, soils extension specialist of the College of Agriculture, University of Illinois.

During the first 10 weeks that the truck was in use, it hauled and spread 800 tons, according to a report of Farm Adviser C. L. Beatty. This, together with other limestone which was hauled into the county during the year, brought the total to 2,000 tons.

If Richland county farmers had spread enough limestone in 1935 to sweeten all their soils so that they would grow legumes, they would have had to use 765,792 tons. This would have taken a fleet of 957 trucks working for 10 weeks like the one shipping association truck did.

The Richland case is cited by Linsley to show what can be done through the cooperation of local agencies to encourage more farmers to use limestone as the first step in a soil conservation and improvement program.

The livestock shipping association of the county is allowing the use of its truck to speed up the limestone program at a hauling charge of 50 cents a ton when the distance from the railroad to the farm does not exceed four miles.

In addition to the limestone used to sweeten sour soils so that the soil building clovers could be grown, two carloads of rock phosphate were used in Richland county this fall. One of these carloads was used by Wes Weiler, Claremont, who has had a limestone-rock phosphate-clover program under way for years. As a result he now has a farm which ranks among the highest in the county in crop yields.

The other car was split among six farmers, most of whom are using the phosphate as added insurance in getting stands and increasing yields of alfalfa and clover.

On soils that are both acid and low in available phosphorus, as is so much of the soil in that section of the state, phosphate is needed in addition to lime for growing of alfalfa and clovers, Linsley pointed out. Phosphate, of course, is also needed for grain crops on these low-phosphorus soils, he said.

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Fear Of Cold May Lead To Overheated Brooder Houses

This winter has made poultrymen so "cold conscious" that there is more danger than ever that brooder houses will be overheated at the risk of severe losses among the thousands of baby chicks that will soon be coming on in Illinois, according to H. H. Alp, poultry extension specialist of the College of Agriculture, University of Illinois.

Even in a normal season too many brooder houses feel like a fourth-story bedroom in a small-town hotel in the summer when the temperature gets around 90 degrees, he said. This year, having just come through a record cold winter, poultrymen will be inclined to fire heavier than usual, Alp added.

"There is no need of running the risk of overheating, for chicks have been observed growing and doing well in brooder houses where at times the drinking water would scum over with ice.

"Brooder room temperature should not be confused with brooder stove temperature. The temperature around the stove or hover should be such as to keep the chicks comfortable without crowding them when they settle down for the night around the edge of the hover. The stove temperature usually maintained is about 90 to 100 degrees depending upon the age of the chicks."

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Number 10

## Hog Prices Not Up The Maximum Yet From Lifting Prices

Hog prices have not had the full benefit of the direct effect of the removal of the AAA processing tax, according to Illinois Farm Economics, a monthly circular issued by the department of agricultural economics, College of Agriculture, University of Illinois.

To date removal of the tax appears to have had more effect toward reducing prices of hog products to the consumer than toward increasing the price received by the farmer for his hogs, according to the circular.

However, hog prices benefited more than would appear from the course of prices alone, the circular continues. Had it not been for the removal of the tax the first week in January, there would probably have been a decline in hog prices, owing to the larger supply coming to market. Probably the actual amount marketed from week to week also was somewhat affected by the removal of the tax and the consequent rise in price, it is believed.

Evidence of how consumers benefited from the tax removal is seen in the fact that the value of products for each 100 pounds of hogs declined by more than \$1 following the Supreme Court decision of January 6. Hog prices, on the other hand, rose about 50 cents a hundred pounds immediately and advanced still farther later.

Movements of prices and of receipts of hogs during the past month have confirmed the evidence previously available which indicated that the direct burden of the hog processing tax was not being borne by the packers, the circular points out. Rather it was being shifted partly to the consumers and partly to producers with the latter bearing a major portion of the direct effect of the tax.

"Insofar, of course, as the tax and the AAA program reduced the supplies of hogs coming to market, it also increased prices received by producers. Furthermore it should also be borne in mind that nearly all of the money collected by the hog processing tax was returned to corn and hog producers through the rental and benefit payments. Hence it can not be said that hog producers as a whole were burdened through the existence of the processing tax and the adjustment program."

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## Cod Liver Oil Not Needed By Pigs On Balanced Rations

Despite claims that may be made for it, cod liver oil has little, if any, place in practical, well-balanced rations for hogs on Illinois farms, according to results of tests just concluded by the experiment station of the College of Agriculture, University of Illinois. Like many others the tests which have just been made demonstrate again that swine rations made up of common farm feeds and enough suitable protein supplements to meet the protein needs of the animal do not require cod liver oil or other purchased sources of vitamin D, it was pointed out by W. E. Carroll, chief in swine husbandry at the college.

Results of the tests are considered all the more significant because conditions were especially favorable for cod liver oil to exert any benefits which it might have had. The ration consisted largely of hulled oats fed during the winter with the pigs not allowed outside the swine barn.



Fourth Of Seed Corn Is Found Dead In Check-Up Tests

Latest tests made in a careful check-up of the seed corn scarcity facing Illinois farmers have revealed that 28 per cent, or considerably more than one-fourth, of the seed in samples from 11 counties is dead, according to J. C. Hackleman, crops extension specialist of the College of Agriculture, University of Illinois.

Twenty per cent of the seed germinated weak, and this together with that which was dead left only a little more than half of it germinating strong.

There were samples from 22 different lots of seed in the tests which are being made in an effort to locate stocks upon which Illinois farmers can draw for planting this spring.

Results of the tests bear out earlier fears that the seed corn situation this spring may be as bad as the memorable one in 1918, Hackleman said. Farmers throughout the state are now engaged in an intensive hunt for seed that will grow, but even so there probably will not be enough to plant the acreage that otherwise would be put in this spring.

Any farmer who wishes to make a hasty survey of his crib corn to see whether it is worth testing for germination can get some idea by running a moisture test on it, Hackleman said. However, care should be taken to get representative ears for the test. Corn with 18 per cent or more of moisture is almost certain to be low in germination.

In one of the 22 lots of seed which has just been tested 81 per cent failed to germinate and 19 per cent germinated weak. This stock of seed, the worst in the test, rated "bad" on disease.

The best lot of seed in the tests to date has been a small sample from a southern Illinois county that contained only 2 per cent dead seed and 14 per cent that germinated weak.

Hopes that cribs of corn containing seed reasonably safe for planting could be located throughout the state are not being realized in the tests. The biggest crib was one of 3,200 bushels, but it tested 39 per cent dead and 19 per cent weak with a disease rating of "bad."

In another crib 58 per cent of the seed was dead, 24 per cent of it germinated weak and diseases were "bad." One lot of 500 bushels germinated 23 per cent dead and 18 per cent weak with diseases "medium." Four lots of 100 bushels showed all the way from 4 to 58 per cent of the seed dead and from 15 to 42 per cent of it weak.

Nothing but small lots of seed which would be needed by the individual farmers or their neighbors were represented by the remaining samples in the latest tests. A number of these were seed not worth planting.

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Drive For Better Dairying Now At Peak In State

Now in its twenty-sixth year, the drive to improve Illinois' 1,178,000 dairy cows and dairying methods so that higher quality milk can be produced more economically and more profitably is going forward at a new peak for all times past, according to Prof. C. S. Rhode, of the dairy department, College of Agriculture, University of Illinois.

Dairy herd improvement associations, through which this work is carried on, now number a new high total of 63 serving more than three-fifths of the counties of the state. In these associations there are more than 1,000 members who are the owners of approximately 20,000 cows.

The first association was formed in McHenry county in October, 1910. The new high total of 63 associations was reached during the past year when four new associations were formed. Some herd owners have been members of their county associations for 23 years.

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Livestock Rank Boon To Illinois In Erosion Control

Illinois' rank as the third leading livestock state puts her in a strong position to combat soil losses on the 22 million acres of the state that are subject to one degree or another of erosion ranging from harmful to destructive, according to E. T. Robbins, livestock extension specialist of the College of Agriculture, University of Illinois.

Permanent pastures to control erosion go hand in hand with good livestock management, he said. In some cases gullies, or what would be gullies under other conditions, have been made to return a profit in pasture, he said.

"Low land between hillsides where the soil is inclined to wash away has been made to stay put and also to yield an income in livestock pasture on many farms that have been carefully managed. In many cases the only precaution taken is never to plow these low parts of the field. Whenever the field has been sown to grass in the regular part of the rotation, the low places have been allowed to stand over. Of course, in some cases additional precautions have been necessary. Actual gullies have been filled with brush or have been plowed full or dams or barriers of various kinds have been built across them.

"Timothy and bluegrass and mixtures of timothy and clovers do well for pastures in such cases. In southern Illinois even lespedeza alone has proved very useful in holding these sloping areas.

"Livestock gathers the herbage and is glad to get it. Even when the balance of the field is in cultivation, the grass in the sloping areas is not wasted. In the winter time when stock is turned into the fields to gather such stray forage as they may find, the grass along these draws is relished and helps to balance the other forage. Experiences of farmers who now sometimes leave a whole field of grass without grazing in the summer have shown that winter grazing makes about as much income an acre as summer grazing. This grass along the low ground in the fields is just as satisfactory."

To this extent soil conservation in some sections of Illinois is already under way. In these areas comparatively rolling land shows very little erosion because grass has been used for years to hold the soil in place. Bureau and Henry counties in western Illinois are examples. Land there with considerable slope is in bluegrass or rotation pastures much of the time, and there is comparatively little gullying to be seen. In contrast such slopes in the central and southern parts of the state often are badly gullied.

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Selection Will Pay Even If Hatching Eggs Are Scarce

A temporary scarcity of hatching eggs brought on by the record cold weather will be costly to Illinois poultrymen this year if it tempts them to use anything but the best eggs for hatching purposes, according to H. H. Alp, poultry extension specialist at the College of Agriculture, University of Illinois.

Careful selection of hatching eggs is one of the easiest ways for flock owners to make some improvement in their stock, he said. This advantage will be lost if poultrymen use just any kind of hatching eggs in an effort to meet the extra demand brought on by the cold-weather scarcity, he added.

"The old saying that 'like begets like' is true enough to make the careful selection of hatching eggs very much worth while. It is definitely known, for instance, that egg-shell color and egg size are inherited. Hence the flock owner has a splendid opportunity to make a start in obtaining uniformity in color and size of eggs by sorting his hatching eggs on this basis."

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# The Extension Messenger

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Number 11

## Sealing Started To Guard Users Of Hybrid Seed Corn

With hybrid seed corn becoming so popular that it may lead to another "racket," a new seed sealing plan has just been started in Illinois to insure farmers that they will get the genuine article. The Illinois Crop Improvement Association and the College of Agriculture, University of Illinois are cooperating in the new plan under which certified hybrid seed corn for the first time is being sold under seal in Illinois.

Demands for hybrid seed corn are mounting, but only about 1,500 acres of commercial stocks were grown in Illinois in 1935, or enough to plant between 200,000 and 250,000 acres this coming season. Scarcity of all types of seed corn and reports that non-genuine hybrid seed is being palmed off on farmers make the protective sealing more urgent than ever, according to J. C. Hackleman, crops extension specialist of the agricultural college.

All growers whose hybrid corn is approved by the Illinois Crop Improvement Association will be authorized to sell their certified seed under the tag and seal of the association. Requirements for seed approval are such that the seal and tag are a guarantee both of genuineness and quality, or germination.

No lot of hybrid seed is eligible for certification unless it has been tested for at least two years in the field performance trials carried out throughout the state by the agronomy department of the agricultural college. Furthermore the hybrid must have produced distinctly better than the open-pollinated varieties with which it was compared in one or more of the regions or areas of the state in which the trials are conducted. All corn entered for certification is inspected three times in the field during the growing season.

Field performance records of all hybrids in the 1935 trials are just now being summarized by the agronomy department of the agricultural college.

In addition to the field test all corn entered for certification is inspected and tested after harvest.

The tag which is sealed on the seed bag under the new certification system carries the name and number of the hybrid, the grower's identification, results of the germination test, the county where the corn was grown and the area of the state to which it is adapted.

This tag is sealed on the string with which the bag is tied, a specially devised seal bearing the emblem of the Illinois Crop Improvement Association being used for the purpose. Seed selected from a field that was grown from a commercial hybrid is not genuine, and can not be sold under the tag and seal. There have been reports that such corn was being offered to farmers as "hybrid" seed.

The only genuine kind, according to the official tag is "first-generation hybrid seed resulting from cross fertilization involving inbred lines of corn or their combinations, the inbred lines having been self-fertilized until they are reasonably pure."

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Better Hog Prices Put Premium On Swine Sanitation

With market prices for hogs going higher and the supply still greatly reduced, the McLean county system of swine sanitation should come back into its own this season as an economical and profitable plan of producing pork, according to E. T. Robbins, livestock extension specialist of the College of Agriculture, University of Illinois.

Three and \$4 hogs paid slight premiums for the best methods, but now that hog prices have averaged \$8.36 a hundred pounds on the farm in 1935 as compared with \$4.14 in 1934, there is an added gain in following the most advanced methods, he pointed out.

Sanitation enables the farmer to raise as many pigs as usual from two-thirds as many sows, an important consideration at this time when breeding stocks are abnormally reduced as a result of the drouth and the ruinously low prices of the past few years, Robbins said. There are almost no runts in sanitation herds, and all the pigs grow faster. They are ready for market six weeks sooner than usual. This is a point not to be overlooked this year, when the outlook is that the price advantage on hogs will be greatest during the first two-thirds of the marketing season.

Another point in favor of sanitation is that the pigs use a fifth less feed to produce 100 pounds of pork than is the case under old methods.

All these advantages are gained through the fact that sanitation keeps down losses from worms, necrotic enteritis and other diseases and parasites, Robbins explained.

Seventeen years of experience with hogs on one farm have convinced C. M. Smith, of Woodford county, that "sanitation has meant the difference between profit and loss on my hog project. After seven years I discovered that it is impossible to produce pork successfully under the old system with worms, necro and all the other ailments that go with them.

"Sanitation involves some planning and a little more work, but when lost labor under the old plan is considered, the McLean system is really the cheaper. Another advantage of the clean ground plan is that it spreads manure directly to the soil. Additional fertility is added also because the best hog pastures are legumes, and a man will produce them if he adopts the sanitation program."

Four definite things are required in applying the sanitation system. First, the farrowing quarters are thoroughly scrubbed. Second, the sow is washed before farrowing. Third, the sow and litter are moved to pasture without walking over old contaminated hog lots. Fourth, the pigs, until they are at least four months old, are kept on pasture where no hogs have been for at least a year.

Details of the plan and the experiences of hundreds of farmers with it are given in the college's circular, No. 306, "Cheaper and More Profitable Pork Through Swine Sanitation."

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Camp Delegates Put In 65 "Years" Of Superior Work

Setting new standards for 4-H club members in every county of the state, Illinois' delegates to the national 4-H club camp have the equivalent of 65 years of superior project work to their credit. Of the four Harold Morine, Jr., 17 years old, of Hennepin, Putnam county, has the longest record, but the other three are not far behind. They are Charles Norton, 17, Neponset, Bureau county; Lucille Hiller, 19, Makanda, Jackson county, and Phyllis Goodwin, 17, Ritchey, Will county. True, none of them has been enrolled in 4-H club work longer than eight years, but all of them have carried on more than one project a season. In this way they have compiled their equivalent of 65 years. They will be in camp from June 18 to 24 in Washington.

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Horses Help Adjust On Millions Of Acres In Illinois

Those 849,000 horses and mules still being used by Illinois farmers are doing their bit toward agricultural adjustment by keeping between 2,547,000 and 3,396,000 acres of corn, oats, hay and pasture out of market competition, it is estimated by E. T. Robbins, livestock extension specialist of the College of Agriculture, University of Illinois.

At the same time they produce cheap power and help keep down farm labor costs, he pointed out.

"It takes three or four acres to keep every one of these horses or mules a year, depending considerably upon how productive the land is. This is corn, oats, hay and pasture that is not sold and hence that does not swell the market volume of products. It does not depress prices. It is burned in the work stock and removed from the farm business without competing with anything else the farm produces.

"Ordinarily a work horse removes from market circulation the crop from about one-tenth of the acreage which that animal cultivates. The six horses commonly used to operate a good prairie quarter section of Illinois land convert the crop from 15 to 20 acres into the power which they deliver to the wagons and implements.

"This is cheap power at the usual farm prices for horse feed. Furthermore the feed produces new horses to replace those which are worn out.

"Such economy is quickly reflected in farm costs and farm income. As an average for 6,390 records on central Illinois accounting farms from 1930 to 1934 horse farms had an annual expense for labor, horses and machinery of \$9.49 an acre, general-purpose tractor farms \$10.02 an acre and standard tractor farms \$10.16 an acre."

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Failure Of Usual Storage Adds To Seed Corn Crisis

Farmers throughout Illinois are becoming more alarmed over the seed corn situation as tests reveal that storage which would have been safe in other years has failed to protect germination during the record cold weather of the past winter, it is reported by George H. Dungan, associate chief in crop production at the College of Agriculture, University of Illinois.

Unfortunately too many farmers have not yet found this out, he said. Their seed corn has never failed before, and they have handled it the same way this past winter that they always have.

Unless they act soon, the time will be so short when they awaken to their plight that little can be done about it, Dungan warned. Spring farm work will be under way in competition with seed corn testing.

Even if he followed the usually safe method of rack-curing or hanger-drying his seed corn, no farmer can afford to take a chance without ear testing, unless the seed had the added protection of heat to dry it out before the cold weather struck, Dungan warned.

"Farmers in Warren, Marshall, Putnam and Bureau counties have been among the most recent to make this disappointing discovery. Well-matured corn selected from the field before the October 6 killing frost and stored on hangers in an unheated room germinated only 10 per cent. The same kind of corn selected from the field the same day, but stored in a cooperative seed house supplied with some heat germinated 98 per cent strong.

"The only corn that looked promising enough for seed in a recent meeting in Warren county was some that had been stored in a furnace-heated basement. A good looking sample in Marshall-Putnam counties had been stored in an upstairs spare room supplied with some heat through a register from the living room below."

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## What To Seed For Pastures Looms Large This Spring

What to seed is a different question on Illinois farms this spring than it ever was before the national trend turned so definitely toward soil conservation, according to J. J. Pieper, associate chief in crop production at the College of Agriculture, University of Illinois.

It is now estimated that there are more than 1,131,211 acres of land in the state that should be put into hay and pasture in the interests of better land use, but how best to use this land for soil-conserving crops is a new problem for many farmers.

Seeding new permanent pastures is not the whole answer, Pieper said. Many of the so-called permanent pastures in the state's 7,607,035 acres of pasture land are nothing but wornout or unproductive meadows and should be improved if a sound program of land use is thoroughly carried out, he explained.

What to seed depends largely upon the soil type and climatic conditions, Pieper explained.

For the northern two-fifths of the state recommended mixtures for permanent pastures are: Good, well-drained soils--4 pounds Kentucky bluegrass, 4 pounds brome grass, 3 pounds timothy, 3 pounds redtop, 2 pounds alsike clover, 2 pounds red clover and 2 pounds white clover. Poor, well-drained soils--5 pounds orchard grass, 5 pounds Canada bluegrass, 4 pounds redtop, 2 pounds alsike clover, 2 pounds white clover and 2 pounds mammoth clover. Wet, poorly-drained soils--4 pounds timothy, 4 pounds redtop, 5 pounds meadow foxtail, 5 pounds Canada bluegrass and 3 pounds alsike clover.

For the southern three-fifths of the state recommended mixtures are: Good, well-drained soils--5 pounds Kentucky bluegrass, 4 pounds timothy, 4 pounds redtop, 5 pounds lespedeza and 2 pounds alsike clover. Poor, well-drained soils--5 pounds orchard grass, 6 pounds tall oatgrass, 4 pounds redtop, 5 pounds lespedeza and 5 pounds Canada bluegrass. Wet, poorly-drained soils--4 pounds timothy, 5 pounds meadow foxtail, 4 pounds redtop, 3 pounds alsike clover, 5 pounds Canada bluegrass and 4 pounds timothy. In the northern part of this southern Illinois area Korean lespedeza is best adapted and in the southern part Common, Kobe or Tennessee 76 may also be used.

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## Home Economics Work Spreads To 42 Illinois Counties

Forty-two of the 102 counties of the state are now carrying on organized home economics extension work following the recent organization of the thirty-eighth county home bureau in Whiteside county, it is announced by Mrs. Kathryn VanAken Burns, state leader of home advisers at the College of Agriculture, University of Illinois.

Two of the 38 county home bureaus are serving two counties and one of them is serving three, thus accounting for the fact that organized work is now being done in 42 counties. Four other counties, Shelby, Henry, Morgan and Montgomery, have started the organization of a home bureau.

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Feed Supply Is Big Item As Raising Of Chicks Begins

Almost a half million tons of feed will be needed to raise the 35 million or more chicks that are now coming on in Illinois, according to H. H. Alp, poultry extension specialist of the College of Agriculture, University of Illinois.

Flock owners who are not prepared in advance to do a good job of feeding will be in no position to cash in on next winter's egg production, he pointed out. Feed represents very close to half the total cost of growing a pullet to laying age. It is therefore important that the job be well done, he said.

During the first week of their lives the 35 million chicks in the state's annual crop will eat 1,750 tons of feed, Alp reported. It takes about 10 pounds of feed to feed 100 chicks during the first week. By the end of the first 24 weeks 100 chicks will have eaten 2,475 pounds of feed, or more than a ton. This is 433,125 tons for an average state crop of about 35 million chicks.

"Farmers who are planning to sell broilers may find that it takes more feed than they had allowed. Up to eight weeks of age chicks take  $3\frac{1}{2}$  pounds of feed to make a pound of chicken. Between the eighth and the 16th weeks it takes  $5\frac{1}{2}$  pounds of feed to make a pound of chicken, and between the 16th and 24th weeks it takes nine pounds of feed to make a pound of chicken.

"With feed requirements running as high as they do, the total bill can easily wipe out all the profits unless the feeds are carefully planned and the feeding skillfully done. A good mash mixture for starting baby chicks will cost about \$2.25 a hundred pounds including the cost of grinding. This mixture is made up of 50 pounds ground yellow corn, 15 pounds wheat and flour middlings, 10 pounds finely-ground whole oats, 14 pounds meat scrap, 5 pounds dried milk, 4 pounds alfalfa leaf meal, 1 pint cod liver oil or sardine oil and 1 pound salt.

"This should make an excellent starting feed for chicks and should serve equally well as a growing mash if fed with about equal amounts of a grain mixture."

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4-H Training Proves Step To College Course For Many

Training which approximately 26,000 Illinois boys and girls get in 4-H club work in Illinois every year is encouraging an increasing number of them to continue their learning at state agricultural colleges or other institutions of higher learning, according to figures which the College of Agriculture, University of Illinois has just received from the U. S. Department of Agriculture.

This year 421 of the 1,026 students enrolled in agriculture and home economics at the University of Illinois are former 4-H members who conducted definite projects in better farming and homemaking practices under supervision of their county farm and home advisers and the extension service of the agricultural college.

High school teachers of vocational agriculture also are credited with having been a force for encouraging further scholastic training on the part of farm boys through work which they have done as local leaders of 4-H clubs in their communities and through personal contact with the boys and their parents.

That 4-H club work is turning an increasing number of young men and women to state agricultural colleges is shown by figures for the 13 central states. In the 1927-28 college year when the first survey was made, there were only 751 former 4-H club members enrolled as students as compared with 3,395 reported for the current college year, a gain of 352 per cent.

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Brick-Bat "Cure" May Solve Poultry Housing Troubles

Bad as poultry housing conditions are on Illinois farms, a brick-bat through the window is all that is needed to solve the trouble in some cases, according to W. A. Foster, rural architecture specialist of the College of Agriculture, University of Illinois. However, even the brick-bat cure will not work if it does not break out enough glass to let in the minimum need of fresh air, he said.

Some poultry houses are so bad that the only fresh air filters in through the cracks, while in other houses all the fresh air that ever gets in is what comes through the door when the operator enters or leaves. Too much fresh air makes a cold, drafty house, and too little air movement causes a foul smelling, stuffy, soggy house. Neither condition is favorable to health or good egg production.

"The open front house, with intelligent control, takes care of most weather conditions in Illinois. A long roll curtain of muslin or burlap will prevent drafts and still allow fresh air to filter in. This curtain rolled on a rug pole or clothes line prop may be rolled up or down and suspended in any size opening by a pair of light ropes at each end. The fabric must be cleaned frequently to remove the dust so the air can filter through.

"Another method of closing the open front is to make a set of frames similar to screen frames to fit the opening, cover them with muslin and hinge them at the top like a cellar sash. While the muslin will clog with dust, these sashes are convenient and easily closed where necessary. Completely closing the open front with glass or other material through which the air can not pass causes a foul condition in the house."

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Three Squares At 20¢ A Day Feat Of U. I. Homemakers

Three square meals a day at a cost of 20 cents a person is only one of the feats of home economics students of the College of Agriculture, University of Illinois during their stay in the home management apartment on the campus, according to Miss Paulena Nickell, assistant professor of home management.

Feeding the "family" on 20 cents a person a day was done during one of the low-cost days. There are other days when the girls set a medium-cost budget for themselves and still others when they are allowed a high-cost limit in trying out their skill.

What is more important than learning the tricks of feeding the family in a reasonable and acceptable way for the busy life of a 20th century homemaker is the training which the girls get in the real life problems of personal, social and economic adjustments, Miss Nickell said.

Most of the girls show unbelievable development during the three or four weeks they are living in the apartment, Miss Nickell reported. There are four or five girls in the apartment "family" at a time with a resident instructor living with them to guide and challenge them during the "internship." The students take turns for definite periods of time in planning, preparing and serving the meals, in doing the actual housekeeping, in acting as hostess and in taking charge of family activities.

Even the low-cost days are not dull, thanks to the skill which the girls develop at their various tasks. Such a day starts with breakfast of stewed apples, cornmeal mush and top milk, toast and coffee. Lunch may include cream of tomato soup, orange biscuits, a salad of prunes stuffed with peanut butter on lettuce and baked custard. For dinner there may be a casserole dish of potatoes with ground meat and cheese, fresh buttered turnips, head lettuce salad and a dessert of gingerbread and lemon sauce.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
Experiment Station, and Extension Service

Volume XIX

March 25, 1934

Number 13

## Even Level Land Is Not Safe From Fertility Losses

Although 26,082 square miles, or nearly half, of Illinois is so nearly level that erosion is negligible, there are other forces depleting the fertility of this land at a rate which eventually will bankrupt agriculture if they are not checked, according to C. M. Linsley, soils extension specialist of the College of Agriculture, University of Illinois.

Those forces are crop removal and leaching, he explained. Enough phosphorus alone was removed in the grain of the 1933 corn crop to require between 163,416 and 188,557 tons of rock phosphate for replacement, he said.

Steady depletion of soil fertility through crop removal and leaching is being demonstrated in a striking manner on the Morrow plots, America's oldest soil experimental plots on the college campus, Linsley said.

Total phosphorus in an acre of surface soil on one of the plots decreased from 900 pounds in 1904 to 700 pounds in 1923. This is at the rate of 200 pounds in the relatively short time of 20 years. The Morrow plots are on level prairie land not subject to erosion of any kind, and this particular plot was one where corn has been grown without soil treatment year after year. This plot is representative of a large percentage of farms on prairie soils.

"Loss of phosphorus is, of course, only part of the toll. Potash, lime and other constituents of fertility also are being mined out of these soils.

"One of the real soil conservation questions of the day is how long this land can be mined of its fertility without any thought of replacement. Eventually the depletion will have gone so far that these soils can not be expected to support farm families. These are questions of vital concern to the public as well as to the farmer.

"It is none too soon to adopt sound soil conservation methods even on this level land that is not subject to erosion. Proper tests will reveal when the danger line has been reached in fertility removal. Limestone, together with any needed phosphate and potash, must be applied, legumes must be grown more extensively and better cropping systems in general must be adopted."

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## Winter Killing Of Bugs Did Not End Spray Problems

Although Illinois fruit growers were saved between \$60,000 and \$75,000 in spray bills by the winter killing of certain insects, careful and thorough spraying for the remaining pests will still be necessary during the coming season, according to a newly revised edition of the college's circular, "Directions for Spraying Fruits in Illinois." The 28-page publication was issued in cooperation with the Illinois State Natural History Survey to assist Illinois growers in controlling insects and fungous diseases attacking fruit in this state. Copies may be obtained by writing the college.

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Eight New Tomatoes A Boon To Growers And Consumers

Growers and consumers of Illinois' half million dollar tomato crop this year will have the advantage of eight new and superior varieties, produced during ten years of breeding work at the College of Agriculture, University of Illinois and being released to the public for the first time this spring.

Three of the varieties are for field use and five of them for greenhouse use only. All of them are resistant to the destructive fusarium wilt disease and are otherwise superior to existing varieties.

Release of the improved varieties and their characteristics are announced in the college's latest circular, "New Wilt-Resistant Tomato Varieties for Field and Greenhouse," by W. A. Huelsen, associate chief in olericulture. He was in charge of the breeding work which produced the new varieties.

The three new field varieties are Prairiana, Early Baltimore and Illinois Pride. The five suitable for greenhouse forcing only are Blair Forcing, Sureset Forcing, Urbana Forcing, Lloyd Forcing and Long Calyx Forcing.

Anticipating a demand from growers and gardeners for seed of the new varieties, the experiment station of the college announced that it was not in position to supply samples of the seed of any of the new varieties to the general public. Certain seed companies, however, have entered into a written agreement with the station to grow these varieties and list them. The stock seed was raised by the college, and every effort was made to assure varietal purity.

Breeding work leading to development of the new varieties was prompted by the fact that no trustworthy varieties were available for the rapidly expanding tomato acreage in the state. Heretofore none of the available field varieties has proved particularly suited to soil and climatic conditions in Illinois, while only a few successful varieties of greenhouse tomatoes have been available for the choice of growers.

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Spring's Arrival Is Last Signal To Get Garden Ready

Now that spring has come, it is time for the last call on getting the garden ready for planting, says Lee A. Somers, vegetable gardening extension specialist of the College of Agriculture, University of Illinois.

"If the trash was not cleaned up and burned and if the garden was not plowed last fall, these should be done at the earliest possible chance. Burning of crop residues is recommended in spite of the fact that plowing them under would add much needed organic matter to the soil. This is done because the crop residues harbor so many insects and diseases.

"Large amounts of fresh manure may be applied and plowed under in the fall, but only well rotted manures should be used in the spring. In most cases commercial fertilizers are best applied in the spring just before the final disking and harrowing.

"The first day that it is dry enough for plowing is the time to plow the ground deeply. It should then be disked and harrowed until a deep and mellow, yet firm, seed bed has been prepared. The ground should be ready for planting during the first period of planting weather.

"The first planting should consist of the cool-season, quickly-maturing crops that must complete their growth before the full heat of summer comes. These are radishes, green onions from sets, leaf lettuce, cress, spinach, mustard, turnips, kohlrabi and peas. Early potatoes and seed onions should also be planted at the same time. However, these latter crops do not complete their growth until in the heat of summer."

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### Poor Sires Draw New Fire As A Drag On Herd Profits

Fresh vigor is being put into the drive against poor dairy sires on Illinois farms following the experience of one dairyman in having his herd ruined through the continued use of an inferior bull, according to Prof. C. S. Rhode, of the dairy department, College of Agriculture, University of Illinois.

The safest protection for other dairymen against losses of this kind is for them to cooperate with four or five of their neighbors in owning and using proved sires, he said.

The dairyman whose herd was ruined, at least for the time being, is one of the 1,000 or more who are members of herd improvement associations in their respective counties. He started out with a herd of cows averaging 393 pounds of butterfat and through the influence of two different sires built up the average of his cows to 435 pounds of fat. Unfortunately the third sire which he purchased produced daughters which averaged only 351 pounds of fat, or 84 pounds less than their dams.

These daughters now largely make up the herd. This particular dairyman not only has a lower-producing herd than he had years before, but he also has the problem of eliminating the inheritance for low production.

Such losses from the use of untried bulls can easily be prevented if four or five dairymen with clean herds of the same breed of cattle cooperate in the ownership and use of their herd sires, Rhode said. If five men are cooperating, they buy five bulls. Each builds a paddock and breeding pen so that all the bulls will be handled in the same manner. The bulls are exchanged at the end of each 12 to 14 months. This practice greatly lessens the damage that a poor bull will do to any one herd.

Following up this advantage, the cooperating dairymen then test all their cows in dairy herd improvement associations. This insures the testing of the daughters of each bull. If a bull dies or proves undesirable, the herd owners all go together and replace him. The bulls are not used on outside cows.

The five bulls would all be proved in five to six years. The investment in bulls would be reduced, since it would be unnecessary to buy additional sires unless some were lost or proved undesirable. The ones that proved to be meritorious would be given extended service. Sons of the meritorious sires from good brood cows might be used for replacements.

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### Lack Of Vitamins At Root Of Some Animal Diseases

Lack of vitamins is now definitely linked with specific diseases causing losses among the \$266,142,000 worth of livestock on Illinois farms, according to a new circular, "Avitaminoses in Animals," just released by the College of Agriculture, University of Illinois for farmers and veterinarians. Authors of the new publication are Robert Graham, chief in animal pathology and hygiene; H. H. Mitchell, chief in animal nutrition, and Viola M. Michael, first assistant in animal pathology.

Both veterinarians and farmers are encountering important clinical problems because of vitamin deficiencies in farm animals, the authors report. Among such diseases which are pictured and described in the circular are leg weakness of chicks, eye troubles in calves and colts and rickets in swine, poultry and calves. Dogs even may suffer from a disease known as "black tongue," which scientists have proved is closely related to pellagra in man.

Vitamin deficiencies and the train of diseases that follow them are brought on by the exclusive feeding of grains and grain products, subsistence on poorly-cured hays or upon stunted or "burned" pastures and the rearing of young animals under shelter with no sunlight, it is pointed out in the new circular.

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Experiment Station, and Extension Service

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Number 14

## Farm Folks Setting Up Major Problems For New Attack

Leading farm, home and community problems, many of them of long standing, are being brought to the front and attacked in an organized way through the work of program building committees now functioning in practically every county of the state, according to reports received by H. W. Mumford, director of the extension service, College of Agriculture, University of Illinois.

Approximately 2,000 farmers, homemakers and representatives of other interests in the various counties are serving as members of these committees. They were appointed by the extension service and are cooperating with it and with county farm and home advisers in building coordinated educational programs in agriculture and home economics for their respective counties.

Through these educational programs it is hoped to reach a solution of the most pressing farm and home problems.

In Rock Island county, one of the first to get its program building under way, farmers listed as their major problems soil erosion, drouth resistant crops, more economical milk production, development of better breeding stock, weed control and farmstead beautification.

Planting alfalfa on hillsides and farming the lowlands more intensively will be undertaken for erosion control. Changing from red clover to alfalfa will be encouraged as a means of getting a crop that will withstand dry weather. Dairy herd improvement will be stressed to secure more economical milk production and to develop improved breeding stock. Weed control will be sought through eradication of quack grass, while lawns and roadsides will be cleaned up as a step toward farm beautification.

Adequate water supply was listed first among all the home and family living problems in Rock Island county. Others were more adequate work space, more satisfying interiors and exteriors and closer cooperation between various community interests. Activities which are being planned as a solution to these problems include the installation of complete running water systems, building of larger cisterns, arranging of places to do occasional work such as canning and washing, refinishing floors, redecorating walls, developing more attractive lawns and putting in electricity if more reasonable rates can be secured.

Suggestions made for improving community conditions were securing a better supply of good magazines and books for general reading, securing or improving places in which to hold community meetings, encouraging community beautification and securing vocational agricultural courses in high schools.

Five major farm, home and community problems have come out in the early work of the committee seeking to build a coordinated educational program in agriculture and home economics for Adams county. They are: lack of home orchards, the high and increasing rate of tenancy, low acreage of alfalfa and other legumes and the need for more limestone, high death rate owing to heart disease and the importance of 4-H clubs and young adult groups.

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Increased Numbers Of Hogs May Lower Prices This Fall

Because of increasing numbers of hogs coming to market, hog prices in the fall of 1936 may be expected to be lower in relation to the general index of farm prices, according to Illinois Farm Economics, a monthly circular issued by the department of agricultural economics, College of Agriculture, University of Illinois.

A peak in the price of hogs was reached in 1935 as a result of the extreme reduction in the supply compared with the increased demand. In February, 1936, the index of farm prices of hogs was 110, while that of all Illinois farm prices was 86, according to the circular.

Referring to other types of livestock, the circular states that with cattle being held back to rebuild herds, it is probable that the price of beef and dairy cattle will be upward during the next few years. However, during this period the short-time fluctuations may be expected to continue, the circular continues. Present prices both of beef cattle and hogs are high compared with those of grains or of products such as milk, butter and eggs.

Prices of horses, which have risen rapidly the past three years, will likely continue high for several years because of greatly reduced numbers, according to the circular. In January, 1936, the purchasing power of horses was nearly 50 per cent higher than three years ago.

These conclusions on probable prices are based on a study of production cycles made by the department of agricultural economics of the college. As production shifts, numbers of the different kinds of livestock on farms in the United States change from year to year in swings or "cycles."

"These production cycles arise from efforts of large numbers of farmers to increase their production of one kind of livestock in response to more favorable livestock prices or more plentiful feed supplies and later to reduce production when livestock prices have fallen below levels generally considered profitable or when feed has become scarce and higher priced.

"These cyclical movements in livestock production are quite regular, but the length of the cycles is different for different kinds of livestock. The length of cycle is largely dependent upon the length of time ordinarily required for large numbers of producers to work out changes in production plans and to bring the products to the marketing stage."

Some producers keep posted on trends in livestock numbers and do not contribute to these excessive swings of production. Since they are able to anticipate periods of over- and under-production, they succeed in timing their production and marketing to advantage.

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Purchases Of Farm Machinery Reach New High In State

More new machinery will be broken in on Illinois farms this season than at any time since 1930, according to R. C. Hay, extension agricultural engineer, College of Agriculture, University of Illinois.

Proper care of this machinery so that farmer's mounting investments both in new and old equipment will be protected has been emphasized in a series of meetings scheduled in 20 counties and held in cooperation with farm machinery companies and other organizations.

"Now that farmers are increasing their machinery investment, they realize the necessity of giving attention to satisfactory performance and length of life," Hay said. "Proper adjustments and repairs made during slack seasons will go far toward keeping machinery and tractor costs low."

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"Check And Double Check" Is Advice On All Seed Corn

"Check and double check" is the advice of C. L. Gunn, of DeKalb, president of the Illinois Crop Improvement Association, who reports that many lots of seed corn carefully sampled and tested in February are now showing from 10 to 20 per cent lower germination than they indicated during the cold weather.

The average tests of three cribs tested by John T. Smith, Tolono, showed an 88 per cent germination when tested during the cold weather of February, whereas recent tests of selected corn from the same cribs averaged only 67 per cent.

Crop specialists of the College of Agriculture, University of Illinois, believe that the corn was frozen when first tested and has since had time to deteriorate. They emphasize the importance of retesting any corn culled, shelled and graded prior to March 1, or during the cold weather so disastrous to seed corn stores.

Tests made by Smith also showed that well-selected ears on top or along the south and east sides of the crib ran a 40 per cent germination, while at greater depth or nearer the middle of the crib the corn was found to be practically all dead. The reason for this variation according to J. C. Hackleman, crops extension specialist of the college, is that corn along the top and sides of the crib contained less moisture than that in the center.

The experience of R. A. House, of Mansfield, is perhaps typical of many Illinois farmers. House handled his seed corn as he had successfully for a number of years. It was field selected in October, wire-racked and stored in an unheated building. The seed looked good and when knife-tested by both House and his neighbors was pronounced practically 100 per cent. However, a test made in a box of soil in the home showed a 23 per cent germination after seven days.

After taking pains on a well-prepared seed bed no farmer wants to be disappointed with a 50 or 25 per cent stand of corn. That is the reason Gunn and other officers of the Illinois Crop Improvement Association are urging farmers of Illinois to check and double check their seed corn before it is too late. Their slogan is, "Buy only on test and see that the seed is properly tagged."

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New Variety Of Early Garden Pea Being Recommended

Contrary to long held beliefs of gardeners, Alaska is not the only variety of early peas that can be planted this year. Surprise has been found superior to Alaska, according to L. A. Somers, vegetable gardening extension specialist of the College of Agriculture, University of Illinois.

In tests made by J. P. McCollum at the Cook county branch experiment station at Des Plaines, Surprise proved a much better quality pea than the smooth-seeded Alaska. Like Alaska it is resistant to the cold weather and damp soils of early spring and matures at the same time.

Little Marvel is still the leader of the mid-season varieties with home gardeners. Many people, however, are showing a preference for the large-podded and larger-seeded varieties. For these the World Record or Morse Market are suggested. The Daisy, sometimes called Dwarf Telephone, is still recommended for those who desire a late variety.

If Surprise, Little Marvel and Daisy are all planted at the same time in early spring, they will be ready for harvest in approximately 68, 75 and 82 days, respectively, after planting. Free bulletins dealing with the home garden may be obtained by writing the College of Agriculture, University of Illinois, at Urbana.

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## Extra Care Will Aid In Offsetting Light Apple Bloom

Prospects of a light bloom on apple trees this spring following the heavy crop of last year necessitates extra care to increase the set of fruit, according to V. W. Kelley, horticultural extension specialist, College of Agriculture, University of Illinois.

"Mature apple trees which bore a heavy crop last year and those injured by scab will need an application of quickly available nitrogen fertilizer this spring," Kelly said.

"To increase the set the fertilizer must be applied early enough for trees to take it up before bloom occurs. While other fertilizers need to be applied earlier, calcium or sodium nitrate is quickly available and may be applied when the buds begin to show tip green. For best results it is broadcast underneath the branches at the rate of one-fourth pound for each year of tree age, Kelley stated.

"A half dozen trees given good care will produce more good fruit than an acre of neglected trees," he said. "The most common cause of failure in home fruit plantings is neglect, especially if the orchards are so large that too much time is required for care. Many farm apple orchards may yet be saved if owners follow a few simple rules for renovation."

Besides liberal applications of fertilizer, Kelley recommends cutting out poor quality trees in orchards too large. Other renovation rules include pruning out dead wood, water sprouts and crossing branches, and thinning out the bearing surface generally to admit light and permit proper spraying. Following the spray schedule recommended by the college will aid in the control of insects and diseases.

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## New Home Bureaus Planned In Seven Illinois Counties

Interest has developed in the organization plans of seven Illinois counties to see which is to be the 43rd county in the state carrying on home economics extension activities, according to Mrs. Kathryn Van Aken Burns, state leader of home advisers, College of Agriculture, University of Illinois.

Shelby county is temporarily in the lead with 135 signed membership cards and an organization committee that has just completed a series of informal township meetings. The members of this committee are; Mrs. Gayle Lichtenwalter, Mrs. Chris Uphoff, Mrs. Ralph Bartlett, Mrs. Verl Shutt and Mrs. Guy Turney, all of Shelbyville, and Mrs. William Bohlen, of Moweaqua.

While continued bad roads have held up organization plans, Henry county has approximately 300 members signed and still has a chance to be the 43rd home bureau county.

A series of informational meetings, in charge of Mrs. Helen Butner, of the home economics extension service of the college, is planned for Morgan county the week of April 13. County and township committees will soon be announced in Christian county, and organization plans are going forward in Madison, Montgomery and Ford counties.

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Lamb Producers See Added Profit From Better Methods

Illinois lamb producers are in a good position this spring to cash in on the steady improvement they have been making in their methods during the past few years, according to E. T. Robbins, extension livestock specialist, College of Agriculture, University of Illinois.

"With less favorable weather conditions and a slightly larger early spring lamb crop in the principal early lambing regions, quality and improved methods will be reflected on the markets," Robbins said.

After a 400-mile trip through the central and western part of the state he observed that Illinois lamb producers have more quality in their flocks and are up to date in their ideas and methods.

Nearly all the lambs on Illinois farms have been docked except those only a few days old, he states. Buyers have always been prejudiced against long-tailed lambs, believing them to be inferior, since it is common knowledge on the markets that experienced flock owners dock all their lambs.

The practice of buyers in recent years of paying one dollar a hundredweight less for all buck lambs has encouraged sheep men to sell only wether and ewe lambs. Today few Illinois sheep men sell long-tailed lambs or bucks, Robbins says.

"It is noticeable that farmers are more careful and discriminating in buying rams to head their flocks," he declared. "Flocks are showing distinctly the type of breed predominating in the lambs. The long-legged, slim-bodied crooked lambs such as prevailed in many flocks a few years ago are gone. Many of the lambs were born in February and are making rapid progress toward being ready for market in May or June when the price is usually about the best of the year."

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Size Of Onion Sets Is Big Factor In Success Of Crop

With early green onions holding an important place in the demand for spring vegetables, home gardeners who would make sure of supplying this demand are advised to plant sets a large proportion of which range from one-half to three-fourths inch in diameter with the remainder not exceeding one inch, according to Lee A. Somers, gardening extension specialist, College of Agriculture, University of Illinois.

"The value of onion sets depends almost entirely upon their size," Somers said. "Do not buy sets that show an appreciable part over one inch in diameter or under one-half inch, even if they are offered at a low price."

The ideal size, one-half to three-fourths inch in diameter, runs about 280 to the pound or 9,000 to the bushel, with one bushel sufficient to plan an area of 254 square yards, he stated. Few if any sets this size will shoot seed stalks.

Sets from three-fourths to one inch in diameter run about 122 to the pound or 4,000 to the bushel with one bushel planting 110 square yards. From 30 to 50 per cent of these sets shoot seed stalks. However, they make green onions in a shorter time than the smaller size sets.

Sets over one inch in diameter run about 64 to the pound or 2,000 to the bushel, which plants only 56 square yards. A large proportion of these sets shoot seed stalks and never form bulbs, Somers said. Moreover, they are of poor quality when used as green onions.

Since they do not have enough stored food to produce a vigorous growth, onion sets less than one-half inch in diameter are too small for general planting. However, they may be planted thickly in the row and will eventually produce green onions, or possibly small bulbs.

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Illinois Farmers Eager For Rural Electrification

With only 13 of every 100 Illinois farms having electric service, increased interest in rural electrification has resulted in the extension service of the College of Agriculture, University of Illinois, holding a series of district conferences to discuss problems connected with the expansion of electric service to farms, according to E. W. Lehmann, head of the agricultural engineering department of the college.

Discussion at the conference will be led by representatives of the Rural Electrification Administration, State Commerce Commission, Illinois Agricultural Association, utilities, municipal light plants and the extension service. Delegates to the conference will include farm and home advisers and members of county program-planning committees.

The complete schedule includes meetings at Mt. Sterling on April 15; Carlinville, April 16; Belleville, April 17; Champaign, April 20; Galesburg, April 21; Polo, April 22; Ottawa, April 23; Olney, April 28; Harrisburg, April 29 and Anna, April 30.

"It is believed that electric service can be extended economically to from 20,000 to 30,000 Illinois farms during the next 4 or 5 years," Mr. Lehmann said. "The county program-building committees who have been working with the extension service of the college to establish a coordinated educational program in agriculture and home economics have found rural electrification to overshadow most other interests in many sections of the state."

The important factors determining the cost of the extension of electric lines the standard of line construction, the development of rates and the uses to be made of electricity on farms served will be among the problems to be discussed at the conferences. In addition, attention will be given to means by which the farm and home advisers and the program-building committees may aid farmers in their county who desire electric service.

County meetings will be held after the district conferences are completed, Lehmann said. R. R. Parks, who has recently been appointed to the extension staff of the college, will devote a major portion of his time to these county rural electrification meetings working with the farm and home advisers and the program-building committees.

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300 Students To Judge Livestock In All-Day Contest

Representing every section of Illinois, more than 300 farm boys, students in the College of Agriculture, University of Illinois, will test their skill in an all-day stock judging contest to be held at the college May 2. Prizes will be awarded to the winners on the evening of May 5 at the annual Ag Banquet.

Earl C. Smith, president of the Illinois Agricultural Association, will be the main speaker at the banquet.

The judging contest is sponsored by members of the Hoof and Horn Club and the Dairy Club, student organizations, to provide experience and training for the members of the judging teams who will represent the college in competition at livestock shows next fall. The students will judge beef cattle, dairy cattle, horses, hogs, sheep and meats. The contest is open to freshmen and upper-classmen other than seniors.

Approximately 100 prizes will be awarded the winners at the Ag Banquet, the prizes being donated by manufacturers, utilities, farm organizations and industries.

John C. Alison, Quincy, and E. G. Young, Bismarck, juniors in the College of Agriculture, are members of the committee in charge of the contest. Wayne Churchill, Ellinsville, heads the committee making arrangements for the banquet.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
Experiment Station, and Extension Service

Volume XIX

April 22, 1936

Number 17

## Marketing Farm Products Up First At Co-Op Conference

Problems and developments in the marketing of products through farmers' cooperative associations, doing an estimated annual business of more than one and one-third billion dollars, will occupy the discussions at the opening session of the American Institution of Cooperation, according to H. C. M. Case, head of the department of agricultural economics, College of Agriculture, University of Illinois.

The 12th annual meeting of the Institute opens at the college June 15 and lasts throughout the week. An enrollment of more than 2,000, coming from all sections of the country, is anticipated.

"Each day farmers are facing new problems in the marketing of every type of agricultural product," Case said. "The extension, during the past 10 years of a vast network of hard roads, has tended to place the farmer within easy reach of markets 100 miles or more distant. Today, a large proportion of Illinois livestock is trucked to terminal markets. Transportation by truck and waterways has brought a new problem to the local elevator.

"Dairymen face the conflict of overlapping milksheds and varied marketing policies in different cities. Rapid and long-distant transportation by truck and rail is bringing keener competition for fruit and vegetable areas. These and many other problems will form the basis of discussion at the opening session of the institute with nationally recognized authorities giving the results of their experience and studies on present conditions and new developments."

The first general session of the institute opens at the college, Monday, June 15, at 9 a.m., with a discussion of the problems of livestock marketing by Charles A. Ewing, Decatur, retiring president of the National Livestock Marketing Association and chairman of the institute. He will be followed by Charles W. Holman, secretary of the institute, discussing dairy marketing.

M. W. Thatcher, of the Farmers' National Grain Corporation, will take up the problems of grain marketing, and E. F. Creekmore, vice-president and general manager of the American Cotton Cooperative Association, will discuss cotton. Fruit and vegetable marketing problems have been assigned to N. L. Allen, general manager of the National Fruit and Vegetable Exchange, of New York, one of the best known authorities on the subject.

"One of the objectives of this first session is to indicate the trend of the program and give the group an idea of which of the following sessions they desire to attend," Case said. "The program is arranged to be of interest to the producer and seller of any type of agricultural product as well as the purchaser of farm supplies."

The American Institute of Cooperation is an educational enterprise supported by the leading farmers' cooperatives of the nation. Each summer it meets as the guest of one of the leading educational institutions.

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Extra Risks In Planting Corn Too Early This Season

Despite the fact that best corn yields are obtained from early planting, Illinois farmers are advised by G. H. Dungan, associate professor of crop production, College of Agriculture, University of Illinois, to be cautious about planting too early this year.

"With the majority of the Illinois seed corn of low germination, a few days delay in the planting date should give the weak seed the advantage of a warm seed bed," Dungan said. "And by all means the seed corn should be treated. Seed treatment by disinfectants is the best protection for weak seed against adverse conditions of early spring."

Effect of the planting date on corn yields is shown by a five-year study made by the college.

In northern Illinois, mid-season varieties planted May 11 gave a five-year average yield of 45 bushels, with May 27 plantings averaging 46.4 bushels and June 7 plantings 38.9 bushels. Late varieties with the same planting dates gave average yields of 49.6, 47.4 and 39.3 bushels, respectively.

In central Illinois mid-season varieties planted May 2 had an average yield for the five years of 64.7 bushels, with May 21 plantings yielding 61.6 bushels and June 11 plantings 47.8 bushels. Full season varieties with the same central Illinois planting dates yielded 69.2, 64.4 and 47 bushels, respectively.

Last year experiments conducted by the college on general run corn to learn the effects of seed treatment gave treated corn a  $\frac{1}{4}$  bushel an acre advantage over untreated corn in northern Illinois, a 3.6 bushel advantage in the central part of the state and an advantage of  $8\frac{1}{2}$  bushels in southern Illinois.

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Bang's Disease Germs Are Not Uncommon In Raw Milk

The organism causing Bang's disease in cattle and undulant fever in human beings is not uncommon in unpasteurized pooled milk sold and used in many Illinois communities, according to studies made by Robert Graham, chief, division of animal pathology and hygiene, College of Agriculture, University of Illinois, and J. P. Torrey, formerly assistant animal pathologist, state department of agriculture.

However, pasteurization as employed in the Illinois milk depots from which samples for their study were obtained destroys *Brucella abortus*, the Bang's disease organism.

Milk samples from 68 different milk stations located in 28 Illinois counties were collected by inspectors of the state board of health and submitted to Graham and Torrey for their study. Milk from 68 pasteurized and 62 unpasteurized samples was injected into guinea pigs. Six weeks later no trace of the organism was found in those animals injected with pasteurized samples, while *Brucella abortus* was isolated from guinea pigs injected with 31, or 50 per cent, of the unpasteurized samples.

"The percentage of *Brucella* infection encountered in the samples examined is obviously higher than the incidence of the disease in Illinois herds, and it is assumed that the pooling of milk from several cattle or several small herds accounts for this variation," Graham said. "Obviously if milk from Bang's disease free herds is mixed with milk from infected herds, it naturally follows that the organism may be present in the composite samples."

Results of the study were reported in a paper presented at a recent meeting of the Illinois State Academy of Science.

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Orchards Face Threat Of Early Infection With Scab

Danger of an early scab infection has been increased by the continued cool rainy weather of the past few weeks, making it necessary for orchardists to pay special attention to scab control, according to H. W. Anderson, pathologist, department of horticulture, College of Agriculture, University of Illinois. Two pre-bloom sprays of some sulphur fungicide are recommended.

Despite the cool weather apple buds started coming out at about the normal time in southern Illinois, where overwintering spores of apple scab were found to be mature as early as March 15. A number of growers in southern Illinois applied the first pre-bloom spray on apples March 30, and the second about April 6.

Approximately 98 per cent of the scale which was above the snow line and about 50 per cent of the codling moth were killed by the cold winter weather in that part of Illinois north of Centralia, reports W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the College of Agriculture. However, in the territory south of Centralia, the survival of scale was higher.

The College of Agriculture, University of Illinois, is preparing a weekly report designed to inform growers of the developments in the orchard disease and insect situation so that they can take proper steps in time to protect their fruit crops. The report is a result of surveys made in Illinois, Indiana, Missouri and Kentucky by the state agricultural authorities, the Illinois Natural History Survey, the federal department of agriculture and cooperating growers. It is broadcast weekly by a number of radio stations in these three states.

A schedule of the stations carrying the report and the time of broadcast may be obtained by writing the College of Agriculture at Urbana.

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Horse Decline Releases Vast Acreage From Feed Crops

An area the size of the state of Illinois has been released from feed production by the 37 per cent reduction since 1920 in the horse and mule population of the United States, according to E. T. Robbins, livestock extension specialist, College of Agriculture, University of Illinois.

This area is approximately equal to the acreage which the new soil conservation and domestic allotment program plans to shift from soil-depleting crops to soil-building and conserving crops.

"Although farmers now have about 10,000,000 fewer horses and mules to feed today than they had 16 years ago, crop acreages have not been reduced to meet this change," Robbins said. "The new farm program, with its plan for less land in grain and more land in grass, is needed to help establish this balance."

While the numbers of other types of livestock have fluctuated violently and irregularly from year to year, the change in the horse and mule population has been gradual. During this 16-year period, the change in horse and mule numbers has been steadily downward, but has averaged less than 3 per cent a year.

"So gradual has been the decline," says Robbins, "that few farmers realized the decreasing demand for feed and forage and have continued to contribute to surpluses of grain crops."

On January 1, 1936, Illinois farmers had 739,000 horses and 110,000 mules.

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Volume XIX

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Number 18

## Earnings Of Illinois Farmers Gain Slightly In '35

While Illinois farm earnings were slightly higher last year than in 1934, cash expenditures increased even more rapidly, according to the April number of Illinois Farm Economics, a monthly circular issued by the department of agricultural economics, College of Agriculture, University of Illinois.

An analysis of farm records from 17 Illinois counties shows that an average of \$630 a farm was spent for machinery, gas, oil and repairs last year as compared with \$409 in 1934, an increase of 54 per cent. The average expenditure for farm improvements was \$180, a 42 per cent increase.

Farmers also spent 29 per cent more for hired labor last year, and livestock expenditures increased 64 per cent, largely for the purchase of feeder-cattle. The only item for which expenditures in 1935 were lower than in 1934 was taxes, which were only 92 per cent as high.

Record-keeping farmers in the counties studied showed an average cash farm income of \$4,227 a farm in 1935 and \$3,799 in 1934, an increase of 11 per cent. The average cash expenditure a farm last year was \$2,559 and in 1934 it was \$1,987, or an increase of 29 per cent. After deducting farm business expenditures from income there was a cash balance of \$1,668 a farm in 1935 as compared with \$1,812 in 1934.

The smaller cash balance last year was offset by larger inventories at the end of the year. Cash expenditures in most areas were large enough that the value of machinery and improvement inventories showed an increase at the end of the year over the beginning for the first time in several years.

Sale of livestock and livestock products was responsible for the increase in cash incomes. Livestock sales amounted to \$2,808 in 1935, an increase of 21 per cent, the circular states. Because of the rapid decline in the price of grain during 1935, cash income from grain sales was less than in 1934.

While yields varied in different areas, combined yields of corn, oats, wheat, soybeans and hay for the state last year were about 4 per cent above the average for the period 1924-33, according to P. E. Johnston, of the agricultural economics department of the college who analyzed the farm reports. Oats and wheat yields were below average; the others were above.

Yields were much above average for a group of counties in the northeastern part of the state and another area east of St. Louis. They were below average for one group of counties in southeastern Illinois and another group along the Illinois river in the west central part. Records have not yet been analyzed for the northern and western areas, which include the beef cattle and hog sections. Because livestock prices advanced during 1935, it is expected that this section will show a greater increase in earnings than other areas of the state.

Counties from which farm record books were supplied for analysis were Randolph, St. Clair, Madison, Clinton, Bond, Montgomery, Effingham, Jersey, Greene, Shelby, Sangamon, Morgan, Adams, McDonough, Ford, Iroquois and DeKalb.

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Co-Op Conference Will Feature Many-Sided Program

Farmers and other interested persons will have an opportunity to study the inside workings in all phases of the cooperative movement when the American Institute of Cooperation holds its 12th annual meeting at the College of Agriculture, University of Illinois, at Urbana, June 15 to 19, according to an announcement made by H. C. M. Case, head of the department of agricultural economics of the college.

"The morning sessions will be devoted to general subjects of interest to all cooperatives," Case said. "Each afternoon those in attendance may choose one of several commodity conference groups where discussions will be led by nationally and internationally recognized authorities in their field. A few evening meetings are scheduled, and a number of entertainment features are planned. The meetings are open to everyone interested in agricultural cooperation. There are no registration charges or fees."

The general session on the opening morning of Monday, June 15, is devoted to marketing development and problems affecting livestock, dairy products, grain, cotton, fruits and vegetables. Tuesday morning the general session will consider transportation problems in relation to livestock, grain, dairy products and fruit and vegetables.

Fundamentals of cooperation will be discussed Wednesday morning under the headings of legally accepted principles of cooperation, essentials of management and control and relationships between cooperatives and agricultural institutions. Consideration of cooperative credit problems will occupy Thursday morning sessions with discussions of available sources of cooperative credit for long- and short-term needs and credit for cooperative associations.

National and international policies is the subject given the Friday morning general session at which time international trade problems as related to wheat will receive attention along with the relation of cooperatives to production problems and agricultural adjustment through conservation.

Group conferences devoted to grain start Monday afternoon with a discussion of producer cooperation in securing supplies. The Tuesday afternoon subject is transportation in grain marketing; Wednesday, problems of local cooperative elevators; Thursday, cooperatives on the terminal market, and Friday, agricultural adjustment round table.

Maintaining personnel and enforcing membership contracts starts the fruit and vegetable group conferences Monday afternoon, with motor truck transportation in relation to cooperative marketing, Tuesday; standardization in grading and packing, Wednesday; and relation of the spray residue problem to cooperative marketing and financing cooperative apple washing and packing plants, Thursday.

Those interested in poultry and eggs will probably want to attend the Monday afternoon group session devoted to production, assembling and handling. Tuesday afternoon this group will discuss types of cooperative effort in egg marketing; Wednesday, the opening of mid-west markets to high quality eggs; and Thursday, poultry marketing.

The livestock group on Monday afternoon discusses the essentials for successful cooperative livestock marketing; Tuesday, improving livestock transportation; Wednesday, factors affecting livestock price levels; Thursday, cooperative service in supplying feeders; and Friday, crop adjustment in relation to livestock production.

An evening general session is scheduled for Monday with a discussion of national trends in distribution.





Spring Decorations Add Most Charm When Well Planned

With the arrival of spring and house-cleaning time, Illinois homemakers who would achieve interesting and distinguished results in interior decoration are advised by Virginia H. Weaver, of the home economics department, College of Agriculture, University of Illinois, that the decoration of a room requires a definite and well thought-out plan.

"Individual character and taste should be expressed in the formation of such a plan," she said. "Practical application and understanding of principles of interior decoration together with a real desire to make the surroundings as beautiful, homelike and consistent with one's needs as possible can not help but express personality in individual and charming homes."

For the sake of unity, a room should be planned both individually and in relation to other rooms of the house. Special tastes and needs of the family should be recognized and provided for in the selection and arrangement of furnishings. City and country homes require different treatments. Lighter, gayer colors and less formal atmosphere characterize the country home.

"In planning the decoration of a room, one should study its structural design," Miss Weaver said. "Its good points can be emphasized and its defects concealed or corrected by the choice of general color tone, by the pattern and texture of the wall paper and by the arrangement of the furniture. A window that is not well placed may be balanced by a wall desk or a table with a mirror above it.

"The size of the furniture must also bear the proper relation to the room. Heavy pieces of furniture should be balanced by smaller ones. Many rooms fail to please because they lack the unity contributed by a carefully established point of focus for the eye, a clock, for instance, in the center of the mantel over the fireplace, or an attractive picture with harmonizing vases or candlesticks. As a rule these are enough to convey an effect of distinction and charm. The eye will ask for no more."

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Big-Team Outfits Reduce Farmers' Expenses For Power

By combining from five to 12 horses under the management of one driver, Illinois farmers operating big-team outfits in their spring work obtain low cost power ranging from 6.4 cents to 11.8 cents for each work horse hour, according to E. T. Robbins, livestock extension specialist, College of Agriculture, University of Illinois.

On ordinary horse farms, a work horse hour costs 18 per cent more and on tractor farms 23 per cent more than on big-team farms, Robbins stated, referring to technical bulletin No. 384 of the federal department of agriculture, based on a survey of horse farms and tractor farms in the corn belt.

"The big-team operators worked the largest horses and mules and averaged the greatest number of days of work a head in a year, yet they cheapened their horse cost by using less grain and more pasture, legume hay, straw and cornstalks," Robbins said. "They turned their work stock out on pasture at night and on idle days in summer, and in winter used legume hay to balance stalk fields and straw stacks to make satisfactory maintenance for horses."

In farms studied in the survey, average amounts fed to a work horse a year were about 3,200 pounds of grain, mostly corn and oats, and 5,000 pounds of dry roughage, including considerable straw and corn stover. In addition the horses grazed about six months on grass and stalk fields.

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## Farmers Eager To Get Advantages Of Electric Service

Organized effort is being made in 85 per cent of the counties in Illinois to obtain electric service for more farm homes, according to R. R. Parks, extension specialist in rural electrification, College of Agriculture, University of Illinois. He has just completed a series of 10 district conferences on the subject throughout the state.

Delegates to the conferences were farmer-members of the rural electrification subcommittees of the county program-building committees and farm and home advisers. Discussion was led by representatives of the extension service, power companies, Illinois Agricultural Association, Illinois State Commerce Commission, and the Rural Electrification Administration.

Local interest in rural electrification, rates, financing of lines, control of companies, cooperatives, municipal organizations and loans through the Rural Electrification Administration were among the subjects brought before the conferences. Attention was also given to plans whereby farmers can get electricity by cooperative effort through the local power company or other interested organizations ready to provide the service.

These plans, according to Parks, will be worked out as a project of the rural electrification division of the program-building committee in each county. These committees are functioning through the cooperation of the farm and home adviser and the extension service to work out a coordinated educational program in agriculture and home economics.

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## Peoria County Student Is Honored For Highest Grades

In recognition of his having made the highest grades of any member of the senior class in the College of Agriculture, University of Illinois, Donald F. McMillen, of Chillicothe, Peoria county, was presented a suitably engraved watch, the Gamma Sigma Delta scholarship award, at the annual initiation banquet of the Illinois chapter.

Seventeen new members including McMillen were initiated into Gamma Sigma Delta at the meeting. Senior students selected for the honor were Robert Dudley Armstrong, Monmouth; Arthur Edison Gullison, Lawrenceville; William Ray Dunn, Farmington; Frank Anton Kreml, Riverside; Russell Turner Odell, Piassa; Paul Lewis Poirot, Nashville; Donald Francis McMillen, Chillicothe; Malcolm Hedley McVickar, Sumner; Robert Burns Musgrave, Hutsonville; Norman Richard Urquhart, Lincoln; Walter Joe Wills, Tower Hill.

Graduate students initiated were Frank Mason Atchley, Urbana; Eldon Bedwell Colegrove, Sharpsburg; John William Green, Champaign; and Joseph Karl Lee, Rigby, Idaho. Aretas Wilbur Nolan, of the faculty, and Carl Reyerson Olson, Freeport, of the alumni were also initiated.

Known as the honor society of agriculture, Gamma Sigma Delta encourages high standards of scholarship in agricultural science and a high degree of excellence in agricultural pursuits.

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Soil Conservation Plan Speeds Pasture Improvement

One of the more desirable features of the new soil conservation program is the soil-building allowance for applications of limestone to crop land and especially to pastures, in the opinion of J. J. Pieper, of the department of agronomy, College of Agriculture, University of Illinois.

"Illinois farmers, who maintain about 7,600,000 acres of pastures, more than half of which is tillable, can get more for their money by fertilizing old pastures than by reseeding them," Pieper said. "Poor pastures in which the palatable grasses and legumes have been replaced by weeds are the result of poor soil conditions rather than any other cause. If the original plants were unable to maintain themselves, then the new seedings are likely to disappear in the same way."

It is a common but mistaken idea that when land becomes too poor for corn and oats it is just about right for pasture, he asserted. The new idea is that fertilizing pastures will give about the same results as fertilizing other crops.

Frequently poor management is to blame for poor pasture. Stock is turned out on the pasture too early in the spring before the grass gets a start, or it is kept on the pasture the entire year. In many instances pastures are grazed too heavily during the least productive part of the year. For those farmers who depend on permanent pastures, Pieper recommends supplementary pastures for early spring, the hot dry months of July and August and late fall.

"Unless one is able to correct the cause of pasture failure, whether it be poor soil or poor management, it is needless to waste further money in reseeding pasture land," he said. "The new program recognizes this fact in making payments available for limestone applications to pasture land."

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Steady Wool Market For Next Few Months Is Forecast

With the 1936 wool clip ready to get underway, Illinois wool producers may expect fairly steady wool prices for the next few months, in the opinion of W. G. Kammlade, associate professor of sheep husbandry, College of Agriculture, University of Illinois.

Pointing out that future wool prices can not be quoted with any certainty, Kammlade bases his opinion on the good tone to the market, small prospects of excessive supplies, increase in prices at recent London sales and the high degree of activity in wool manufacturing centers.

Approximately 65 per cent of the total domestic wool supply of the United States is produced by only 4 per cent of the 600,000 producers in this country, indicating, according to Kammlade, the large size of some of the western flocks. On the other hand the extensive number of small flocks is shown by the fact that 50 per cent of the 600,000 producers supply only 8 per cent of the domestic wool. Most Illinois producers fall in this latter group.

"With proper organization, these producers should be able to control the wool market to a greater extent than they do now, since wool is not a perishable commodity and is produced in quantities insufficient to meet the domestic demand," Kammlade said. "Only 10 per cent of the wool produced in Illinois is marketed cooperatively, while in Australia, the world's leading wool country, 90 per cent of the wool is sold through the producers' cooperative marketing agencies."

Wool production in the United States is expected to be about the same as in 1935 when the output was 429,000,000 pounds, including pulled wool.

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More Even Milk Supply Benefits Farmer And Consumer

Development of a more even seasonal production of milk would reduce production costs and materially increase the incomes of dairymen producing for city markets without raising the costs to the consumer, according to Illinois Farm Economics, a monthly publication of the department of agricultural economics, College of Agriculture, University of Illinois.

By adjusting breeding practices so that some cows freshen in the fall months and some in the spring, farmers could get a more uniform production of milk at lower costs, the circular stated. Fall-freshening cows produce heavily in the fall and winter months as well as in the spring and consequently produce a greater annual quantity of milk than spring-freshening cows.

While total feed costs are higher for cows freshening in the fall, the increase in production exceeds that in feed costs. As a result unit costs of production are lower. A large volume of milk for each cow can be produced uniformly throughout the year at a somewhat lower cost than can a smaller volume with a wide seasonal variation.

An even seasonal production of milk would lower hauling costs to farmers as well as receiving station costs, since both trucks and stations could handle a larger total annual volume, the circular pointed out. Total quantity costs of producing for fluid milk markets would be lowered because of smaller quantities having to be sold for surplus purposes.

"Over a long period of time these cost reductions would be reflected in savings to the consumer," the circular stated.

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Greater Use Of Limestone Being Stressed By Farmers

Maintenance of soil fertility through wise use of agricultural limestone has been suggested as one of the projects through which the Richland county program-building committee, cooperating with the extension service of the College of Agriculture, University of Illinois, may obtain a coordinated educational program for agriculture and home economics, according to Farm Adviser C. L. Beatty.

At a recent meeting of the committee, which is composed of Richland county farmers and homemakers appointed by Dean H. W. Mumford, of the college, it was pointed out that the new soil conservation program lists the spreading of limestone as one of the approved practices for which soil-building, or class 2, payments will be made.

The new plan provides for the payment of \$2.50 an acre for applications of at least two tons of ground limestone an acre when applied on crop land or pasture between January 1, 1936, and September 1, 1936.

"The foundation of any soil conservation and improvement program is the regular and consistent growing of clovers," said Farm Adviser Beatty, at the meeting. "Clovers build up and maintain the active organic matter of the land, conserve moisture, help control erosion and check leaching of plant food. But clovers will not grow on land that is acid--land that lacks limestone."

Other problems discussed by the committee were rural electrification, cooperative marketing and better health measures. Similar committees are functioning in each county in the state.

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## Trend Of Land Tenancy In Illinois On The Increase

Of each 1,000 farm operators in Illinois last year, 445 were tenants, 8 managers, 172 part owners and 375 full owners, according to Illinois Farm Economics, a monthly publication of the department of agricultural economics, College of Agriculture, University of Illinois.

"Trends in recent years, particularly since 1930, point toward an increase in acreages and number of tenant farms and in farms of part owners," the circular stated.

Of each 1,000 acres of Illinois farm land tenants operated 491 acres, managers 15, part owners 211 and full owners 283. Of the 211 acres operated by part owners, it is estimated that about 101 acres were rented and 110 acres owned, so that for the state a total of about 592 acres in each 1,000 were rented and 393 acres operated by owners.

The average value of land and buildings was \$9,536 a farm, or \$69.67 an acre. The highest percentages of tenancy were in counties where the real estate values were relatively high, with operating ownership predominating in sections of low real estate values.

Logan county had the highest percentages of farms operated by tenants in 1935 with 67.1 per cent, Ford had 66.4 per cent, Alexander 66, Grundy 64.2, Piatt 63.4, Livingston 63.3, McLean 61.0, DeWitt and Mason 60.3 and Champaign 60.1. Of these ten counties all but one were located in the central and upper central section of the state.

More than 30 per cent of the farms were operated by part owners in Jasper, Effingham, Clay, Richland, Wayne, Hamilton, Edwards and Perry counties.

Full owners operated 50 per cent or more of the farms in two counties in northwestern Illinois, Jo Daviess and Rock Island, and in eight southern counties, Calhoun, Hardin, Johnson, Massac, Pope, Saline, Union and Williamson.

In nine counties full owners are reported to be operating less than 25 per cent of the farms. They are Logan 20.4 per cent, Piatt 20.5, Mason 21.3, Putnam 22, Ford 22.3, Champaign 22.6, Livingston 23, Alexander 23.8 and Grundy 23.9.

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## Greene Farmers Organize First Swine Club In Illinois

With 47 per cent of their cash income coming from production of swine farmers in Greene county have organized a swine club, the first of its kind in the state formed primarily for the study of swine production problems, according to Farm Adviser George E. Hunt.

Louis Reisch, Carrollton, is president, R. D. Lemon, Eldred, vice-president, and Ennis Tunnison, White Hall, secretary. The membership already totals 30 Greene county swine producers. No membership fees are charged.

At the first regular meeting of the group, W. E. Carroll, chief in swine husbandry, College of Agriculture, University of Illinois, addressed the members on production factors with particular reference to the brood sow.

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Hybrid Seed Gaining Favor With Farmers In State

With corn planting in full swing in most sections of Illinois, reports received by the College of Agriculture, University of Illinois indicate a large increase in acreage planted to hybrid or "mule" corn this year.

One Woodford county corn breeder sold 5,000 bushels of hybrid seed this year, according to H. A. deWerff, Woodford county farm adviser.

As distinguished from ordinary open-pollinated corn, hybrid corn is first generation seed resulting from cross fertilization involving inbred lines of corn or their combinations, the inbred lines having been self-fertilized until they are reasonably pure.

Only about 1,500 acres of commercial stocks of hybrid seed were grown in Illinois last year, or enough to plant between 200,000 and 250,000 acres this spring. The growing preference for hybrid seed is the result of its increased yield and other desirable qualities among which might be mentioned chinch-bug resistance.

In Coles county arrangements have been made for test plots on three different farms for comparison of promising strains of hybrid corn. Eleven or more strains will be tested in the Coles county project under the supervision of Farm Adviser W. S. Myers. Corn test plots have also been planned in Henry county.

General seed corn testing has eliminated some of the hazards of damage caused by severe freezing. Testing is being carried on by high school agricultural classes, 4-H clubs, farm bureaus and individual farmers. In Calhoun county the farm bureau has installed a germinating laboratory in the basement of their building where tests are made under the direction of Farm Adviser J. H. Allison.

A dry spring has enabled many farmers to be ahead of other years in their seed bed preparations. However, authorities of the College of Agriculture, University of Illinois, warn against planting corn too early, since seed corn which is generally weak will give better results if planted in a warm soil.

In Wabash county plans are under way for a junior corn show to be held in connection with the Farmers' Institute.

Officials of the Illinois Crop Improvement Association report entries being received in the ten-acre corn growing contest. The first entrant is Clarence E. Akin, St. Francisville, Lawrence county, a student in the University of Illinois, College of Agriculture.

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Rural Young Adults Figure In Henderson Program Plans

Providing recreational and educational facilities for older young people on farms are among problems for which solutions are being sought by the Henderson county program-building committee, according to Joe Rowley, chairman.

It was pointed out at a recent meeting of the committee that organizations are needed for those members of the community who have been graduated from the 4-H club ranks. Establishment of discussion groups through which these and other members of the community may work out mutual solutions to their problems is another project on which the committee is working.

Appointed by Dean H. W. Mumford, of the College of Agriculture, University of Illinois, the members of the program-building committee are attempting to coordinate the educational activities in agriculture and home economics in Henderson county. Similar committees have been named in other counties in the state to function in co-operation with the extension service of the college.

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The average Illinois hen laid 17 eggs during April, according to H. H. Alp, extension poultryman, College of Agriculture, University of Illinois, who bases his figures on accounts kept by a number of Illinois farmers over a period of 7 years.

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Interest In Cooperative Marketing Covers Wide Range

Visit of a group of Wabash and Jefferson county livestock producers to the stock yards in East St. Louis recently is typical of the increased interest being shown this spring by Illinois farmers in cooperative marketing.

The Wabash and Jefferson county farmers witnessed the grading of sheep, hog and cattle and were addressed by an official of a cooperative marketing association. A group of 60 Woodford county farmers made a similar visit to the Peoria markets where they obtained first-hand information on cooperative marketing.

In Brown county, according to Farm Adviser E. H. Garlich, with the approach of sheep-shearing time, attention is being paid to the cooperative marketing of wool. A wool pool has been organized in Adams county, and wool marketing plans are under way in Henry county.

Interest in cooperative marketing in Coles county centers around livestock and cream. R. C. Ashby, of the department of agricultural economics, College of Agriculture, University of Illinois, pointed out the advantages of cooperative marketing of livestock at a recent meeting of Coles county farmers.

Problems related to the cooperative marketing movement have a national appeal as evidenced by the program being arranged for the 12th annual session of the American Institute of Cooperation which meets the week of June 15 at the University of Illinois, College of Agriculture. Nationally and internationally recognized authorities will discuss cooperative marketing policies with an attendance of between 2,500 and 3,000 expected from all sections of the United States.

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Moth To Kill Is One In Closet, Not One Around Light

"Moths are on the wing and laying eggs which will later hatch into little white worms hungry for the best woolens," says Mary C. Whitlock, of the home economics department, College of Agriculture, University of Illinois.

"If a moth, little or big, is flying around your light, you need not stir out of your chair to snatch wildly at it. That is the wrong kind of moth. But if you are dusting around and see a little buff colored moth scuttling along after you have disturbed her hiding place, that is the time to move fast."

Larvae of the carpet beetle are just as destructive and as numerous as the larvae of the moth, states Miss Whitlock. The adult is a small dark brown beetle about one-eighth inch long and can often be seen on screens or window ledges about to escape outdoors. The carpet beetle larvae like the same kind of food as does the clothes moth larvae.

Pointing out that this is the season to become concerned about such pests, Miss Whitlock recommends naphthalene or paradichlorobenzene crystals for both larvae. The crystals have a clean odor which does not cling to clothing. They can also be given any odor by adding a few drops of a favorite perfume. One pound of crystals are required for each 12 cubic feet of storage space.

Clothing, blankets and furs should be clean when stored for the summer, Miss Whitlock warned. Care should be taken to make sure no moth or larvae are in them. The articles should then be wrapped in good, strong paper with crystals in the bundles and then sealed with gummed paper. If a trunk is used for storage, the crystals should be put on top so that the fumes go down through the textiles.

If clothing is hung in a closet, crystals may be placed in a cheesecloth container or open tin box high in the closet so that the fumes will descend. The closet should be sealed if practical. If not, the supply of crystals should be replenished as they evaporate.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
Experiment Station, and Extension Service

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Number 21

## Soil-Conscious Illinois Farmers Are Buying Limestone

Illinois farmers are becoming more soil conscious, reports C. M. Linsley, soils extension specialist, College of Agriculture, University of Illinois, who bases his statement upon reports of farm advisers from all sections of the state.

A recent survey made in Kane county by Farm Adviser A. C. Johnson indicates that 1,300 tons of limestone will be applied there to sweeten acid soils and speed the growing of legumes for soil improvement. Douglas county farmers ordered eight carloads, or 490 tons, of limestone through the office of Farm Adviser J. Q. Scott during the past 60 days. In Franklin county five carloads have already been applied, and the farm adviser has tested 240 acres for acidity.

George B. Whitman, farm adviser for Henderson county, reports that two quarries are delivering and spreading limestone now with another scheduled to open in the near future. Farm advisers in Bureau and Christian counties tested 310 and 340 acres, respectively, during the past month.

Eleven soil-testing demonstrations were conducted by R. E. Apple, Clark county farm adviser, last month, and in McDonough county three carloads of limestone have been ordered. Farm Adviser C. E. Johnson reports that 1,000 tons of limestone have already been applied by Iroquois county farmers with plans made to spread 2,570 tons before the season ends.

"Revival of interest in testing soil and applying limestone is caused by farmers having more money for the purchase of limestone and the emphasis now being placed on soil treatment and legumes by the new soil conservation program," Linsley said.

"Not only is the spreading of limestone one of the approved practices by which farmers may qualify for the class 2, or soil-building, allowance under the new plan, but also farmers realize that if they are to raise a stand of clovers and other legumes on their diverted acreage they will need to apply limestone to any soil that tests sour."

"While Illinois farmers have applied 7 million tons of limestone in the past 15 years, there is still so much acid land in the state that 55 million tons of limestone would be required to sweeten all of it."

Linsley expressed himself as being pleased that so many farmers are showing an interest in purchasing their limestone early in the season.

"Most farmers prefer to apply limestone during August and September when other farm work is a little slack, but with the heavy demand for limestone anticipated for this season, many limestone users, who fail to make their plans soon enough may be disappointed because limestone quarries may not be able to take care of the demand during the rush period," he said.

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## Lights Alone Not Enough Farm Outlet For Electricity

If the extension of rural electrification to more Illinois farm homes is to become a practical reality, farmers who are anticipating the use of such service must plan to consume at least 100 kilowatt hours of current a month. Fixed charges to cover the cost of power line construction are such that to enjoy cheap electric service farmers will have to use electric current for more than lights alone, according to R. R. Parks, extension specialist in rural electrification College of Agriculture, University of Illinois.

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Forestry Advocated As Solution Of Idle Land Problem

Illinois' first conservation week has again called attention to the fact that the state's original forest acreage of 15,000,000 acres has been reduced by land clearing, fires and grazing to 3,200,000 acres.

"Not only during conservation week, but also during each week of the year we should concentrate on the absolute necessity of renewing and maintaining our natural forest resources which are so essential to the conservation of soil, water, fish, game and even human life," said J. E. Davis, extension forester, College of Agriculture, University of Illinois.

"As it is now, intensive land clearing combined with misuse of both land and forests has left us with an area of idle land estimated at 2,000,000 acres. This produces nothing worth while and contributes nothing to the welfare of the state," Davis continued. "Furthermore if present practices continue, 72 per cent of the present forest area can be expected to become idle land also, since this is the amount which is grazed, and grazing can mean nothing but the destruction of the forest.

"It is true that the greater part of the land originally cleared has proved its worth as productive crop land, but pioneer Illinois farmers had no way of knowing that some lands should forever remain in forests.

"In forestry lies the solution of Illinois' idle land problem. Much of the land which can not profitably grow agricultural crops can grow tree crops. In such a program multiple use should be the keynote rather than timber production alone. In Illinois forests are most useful for erosion control, watershed protection and recreation. Trees used for these purposes may be used for timber when mature.

"Small areas of woodland and idle land on operated farms present problems to be handled by the private owner, whose primary purpose is the production of wood materials to fulfill home needs. The private woodland owner has available to aid him the extension service of the college, the State Natural History Survey and the Soil Conservation Service."

Value of forest plantings in the conservation of soil resources has been recognized by those who framed the new soil conservation program as evidenced by the fact that forest plantings are listed as one of the approved practices for which payments will be made.

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Trees Damaged By Rabbits And Mice May Yet Be Saved

Damage to Illinois small hardwood or broadleaf trees estimated at \$50,000 and caused by rabbits and mice eating the bark when the ground was covered with snow is now being revealed as trees put forth their leaves, according to J. E. Davis, extension forester, College of Agriculture, University of Illinois.

In some cases the bark is eaten on one side of the tree only. Such trees may recover and completely heal the wound, but Davis recommends painting such wounds with any outside paint to prevent infection with wood-rotting fungi.

The damage is reported to be most serious in the northern part of the state where the snow was deepest.

Where trees have been completely girdled there is no chance of recovery even though leaves may be put forth this spring, Davis stated. He recommends cutting off such seriously damaged trees just above the ground to give full feeding strength of the roots to the sprouts which may develop at the root collar. The following spring all sprouts except the largest and best formed may be pruned, allowing the one remaining to develop a new tree.

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Old Records To Be Attacked In 14 Horse Pulling Meets

Interest in horse pulling contests is developing early in Illinois this year and according to present indications will result in a larger number of contests than the 23 held last year, reports E. T. Robbins, livestock extension specialist, College of Agriculture, University of Illinois, who has charge of the contests.

At stake in the contests will be a new state record for heavy teams established last year by Jim and Dick, powerful gray Percherons owned by Charles N. Lett, Sandwich. Each of these horses weighs about a ton. Their record of 3,400 pounds was set June 15, 1935, in a contest held near Wheaton. The record of 2,825 pounds for teams weighing less than 3,000 pounds was established in 1932 by a team belonging to Willard Rhoads, Springfield.

Fourteen contests already have been scheduled in Illinois for the coming summer and fall. The first will be held June 20, on the Chicago Tribune's experimental farm, near Wheaton, giving Jim and Dick their first chance to defend their championship against all comers. Location and dates of other contests already scheduled are Charleston, August 3; Cambridge, August 11; Albion, August 13 and 14; Springfield, August 17 and 18; Knoxville, August 19; St. Joseph, August 25; Milford, August 26; Roseville, August 28; Pecatonica, August 29; Stronghurst, September 3; Monticello, September 4; Petersburg, September 10 and Henry, September 11.

Contests are usually held at fairs where facilities are available for handling the crowds and teams.

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Paint And Paper May Make A Room Seem What It Is Not

With many Illinois homemakers in the thick of spring house-cleaning, Miss Dorothy J. Iwig, home furnishings extension specialist, College of Agriculture, University of Illinois, points out that wise selection of wall paper or paint can serve to make a room look larger, smaller, warmer, cooler, or even can give the appearance of raising or lowering the ceiling.

"Homemakers who long for a larger living room, but are faced with the impossibility of house remodeling at present, may increase the apparent size of their rooms by choosing light-colored, smooth-textured paper or paint," Miss Iwig said. "If paper is used it should have a deep perspective and continue to the ceiling."

For ceilings which are low she recommends choosing treatments with vertical lines, not necessarily stripes, but designs that have an upward trend. In this case it would be wise, she said, not to use a drop ceiling.

"In decreasing the apparent size of a large room, darker and more colorful effects can be used, especially those that are rough in texture and large in pattern, provided there is not an over-abundance of pattern in the other furnishings," she continued.

"High ceilings which have characterized the construction style trends of the past few years call for horizontal lines and drop ceilings. The high ceilings may be a tone darker in color than under ordinary circumstances.

"If one has a warm-appearing room, cool colors should be used with blues, blue greens and blue violets predominating. On the other hand if the room appears cold, warm tones are advised such as yellows, oranges and reds. When warm colors are used, however, they should be in small amounts."

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## Chinch Bug Situation Bears Watching, Flint Reports

Chinch bugs are not so bad now as they were during the spring of 1934, the year of record damage, and continued heavy rains especially of the intense summer shower type may so decrease their numbers that there will be little to fear from the pests this year, says W. P. Flint, chief entomologist, College of Agriculture, University of Illinois, and Illinois State Natural History Survey.

However, Flint points out that with from 25 to 30 per cent of the wheat fields showing dangerous numbers of bugs at this time, it will pay to keep a sharp watch for them if barriers are to be erected in time to protect corn fields.

Chinch bug surveys of the last winter showed that while in exposed situations as high as 90 per cent of the overwintering bugs were killed, in protected cover, where most of them hibernated, a considerable number survived. By late March it appeared that about 75 per cent as many bugs were alive as at the same date in 1934.

While it was difficult to get an accurate check on bugs during April and early May, they were observed crawling out of winter quarters about the middle of April. A general flight of bugs occurred on April 30 and May 1 throughout the central and south central part of the state and again on May 7 and 9. A general flight was noted in northwestern Illinois on May 11. Bugs still are not all settled in fields where most of the eggs will be laid.

Examinations made to date show a moderate infestation from Carroll county on the northwest, ranging southeastward through Lee, LaSalle, Grundy, southern Will and Kankakee to about the Indiana line, with bugs not so thick on the eastern side of the state. North of these points infestation is light and spotted, while on the south, moderate to spotted infestation extends to Madison, Bond, Fayette, Effingham, and Cumberland counties with a lighter and more spotted infestation extending 30 or 40 miles farther south.

A check made the middle of May in Champaign, Piatt, DeWitt, Logan, Mason, Cass, Schuyler, Hancock, McDonough, Fulton, Tazewell and McLean counties showed that in 25 per cent of wheat fields examined bugs existed in sufficient numbers to cause damage around the edges of the fields.

"At present the best thing to do is watch the small grain fields closely and make sure if they contain a serious infestation of chinch bugs," Flint said. "It will be much easier to find the bugs in these fields about the first of June. By that time the young will be hatching and the bad spots can be easily located. With from 20 to 25 per cent of the wheat fields now showing dangerous numbers of bugs, it certainly will pay to keep a sharp watch on the situation. The best type of barriers so far developed are described in Circular 431, Fighting the Chinch Bug on Illinois Farms, which may be obtained by writing the College of Agriculture at Urbana."

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Illinois Farm Families Save And Spend More In 1935

Illinois farm families, with 15.7 per cent more cash available for family spending and saving last year, purchased more and better food and clothing, repaired the farm home, bought more home furnishings, and spent more for transportation, education, recreation and health.

These facts are brought out in figures compiled by Mrs. Ruth Crawford Freeman, home economics extension specialist, College of Agriculture, University of Illinois, from home account records kept by 216 farm families.

Furnishing and equipment expenditures recorded in the 1935 home account books show a decided increase over the previous year. Besides many replacements such as dishes, curtains, sheeting, blankets and repair of furniture, many large pieces of furniture and equipment were purchased.

Housing expenditures for repairing the farm home continued to increase. At present most of the expenditures are for repair and upkeep rather than for major improvements, the farm home reports show. Inside paint, varnish, wall paper and general repairing are the most prevalent items of expenditure. The trend toward major improvements when money is available is indicated by the installation on the part of a few of the 216 farm families of running water systems, electricity and furnaces.

The average total food cost a family last year was 16 per cent higher than for the previous year. Purchased food records show that families bought more fresh fruits and foods in the luxury class which they had refrained from buying in former years.

The per capita cost of purchased food for farm families ranged from \$37 a family a year in the group having incomes of \$500 to \$1,000 to \$60 a person a year in the group having incomes of \$2,500 and more.

Expenditures for clothing, transportation, education, health, recreation and church and community welfare also showed increases. Purchases of new cars or later models by 17 per cent of the 216 farm families was responsible for a large part of the increase in transportation expenditures.

In the lower realized income groups the main type of savings was life insurance. Many families were able to pay off, reduce or refinance mortgage payments.

"Farm families are beginning to think more in terms of satisfactions in living," Mrs. Freeman said. "Many of the families last year obtained some of their goals, such as more labor saving equipment, more modern conveniences in the home and education for the children."

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14 Counties At Work On Next Music And Drama Event

Although this is the busiest season of the year, Illinois farm and rural folks have already started preparations for their state music and drama tournament, dates for which are in January, more than seven months hence. Preparations are under way in 14 Illinois counties, it was announced by the state executive committee of the Illinois rural music and drama tournament, meeting recently at the College of Agriculture, University of Illinois. Mrs. L. D. Graham, Lovington, who was elected chairman of the executive committee, reported that organization meetings have been held in Jo Daviess, Kane, Macon, Effingham, Jasper, St. Clair, Pope-Hardin, Kendall, Livingston, Knox, Shelby, Stark and Mason counties.

Members of the state executive committee, who are also district chairmen, are Homer Curtis, Stockton; LaVerne Hanson, Yorkville; Mrs. Webster Gehring, Galesburg; Mrs. Gordon Fillingham, Pontiac; Miss Marjorie Layman, Lincoln; Mrs. Roy Coultas, Winchester; Mrs. L. D. Graham, Livingston; Vance Hulbert, Altamont; Lester Helms, Belleville; and J. R. Strubinger, Metropolis.

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Davis Among Headliners For Meeting Of Cooperatives

Chester C. Davis, administrator, Agricultural Adjustment Administration, Washington, D. C., discussing European outlets for agricultural products will feature that part of the 12th annual session of the American Institute of Cooperation devoted to problems of international trade, reports H. C. M. Case, head of the department of agricultural economics, College of Agriculture, University of Illinois, who is in charge of local arrangements for the meeting. It will be held at the university, June 15 to 19.

"Having spent the past three months in Europe making a special study of outlets for agricultural products, Davis will have a message full of first-hand information on this subject," Case said.

Recognized as the national authoritative educational body of the farmers' cooperative movement, the institute has for its purpose the dissemination of practical and up-to-date information on every factor and development affecting the marketing and distribution of agricultural products. Meeting each year as the guest of a leading university, it centers its major attention upon the immediate problems confronting farmers' purchasing and marketing associations.

Discussions of international trade will occupy the interest of the institute at two evening meetings, one on Monday, June 15, and the other Thursday, June 18. Administrator Davis will speak at the Monday evening general session which will be presided over by Edward A. O'Neal, president, American Farm Bureau Federation. The more than 3,000 expected to attend the conference will be welcomed by Dean H. W. Mumford, of the College of Agriculture. Following Davis on the program will be C. W. Peterson, Calgary, Canada, discussing international trade problems as illustrated by wheat.

Thursday evening's section of the international trade discussion will feature L. R. Edminster, Washington, D. C., head economic analyst, trade agreement section, State Department of the federal government.

"Edminster can be regarded as an official spokesman of the State Department," Case said. "The Thursday evening general session will be presided over by C. V. Gregory, editor of Prairie Farmer. Edminster's address on the trade policy of the United States will be followed by general discussions."

Leaders of the general discussions on international trade problems will be H. M. Conway, Chicago, National Livestock Marketing Association; N. C. Williamson, New Orleans, American Cotton Cooperative Association; Charles W. Holman, Washington, D. C., American Institute of Cooperation, and M. W. Thatcher, Washington representative, Farmers' National Grain Corporation.

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Mosaic Disease Of Wheat Now Found In 17 Counties

Illinois farmers are watching their fields of winter wheat for evidences of a new disease, wheat mosaic, which threatens the state's average annual production of 27,449,000 bushels valued at \$22,179,000, according to Dr. Benjamin Koehler, crop pathologist, College of Agriculture, University of Illinois.

Evidence of the disease has been found in former years in Menard, Macon, Lawrence, Wabash, Madison, Pike, Morgan, Cass, Tazewell, Mason, McLean, Logan, Piatt, Sangamon, Vermilion, Edgar and Clark counties, and it is feared that it is on the spread. To combat the disease the college, in cooperation with the federal department of agriculture, is conducting experiments to determine varieties highly resistant to mosaic and at the same time possessing other desirable characteristics.

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## 3,500 Farm Boys And Girls To Attend U. Of Ill. Tour

More than 3,500 farm boys and girls from all sections of Illinois are expected at the College of Agriculture, University of Illinois for the 14th annual 4-H Club University Tour, June 9, 10 and 11, according to an announcement made by E. I. Pilchard, extension specialist in junior club work.

Contests in girls' trios, boys' quartets and stunts will open the program Tuesday morning, June 9, with a music and stunt festival scheduled for that evening.

"The purpose of the music and stunt events is to encourage interest in preparing and giving entertaining and cultural features at programs sponsored at local and county 4-H Club meetings," Pilchard said. "Quartets, trios and stunts will be judged and graded as class 1, above average; class 2, average, or class 3, below average. This method of grading will enable entrants to measure development in the quality of their work from one year to another."

A feature of the opening day program will be a talk by Mr. T. E. Musselman, of Quincy, a nationally recognized authority on birds and bird life.

This year instead of a special all-state orchestra performance the entire time of orchestra will be devoted to a series of classes in band and orchestra work under the direction of Mark H. Hindsley, assistant director of the University concert band.

"This change provides an opportunity for any boy or girl who plays an instrument to obtain expert instruction," Pilchard said.

The all-state chorus will appear on a special program on Thursday, the last day of the tour. Trio and quartet contestants will be represented in the chorus.

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## State Committee Of New Soil Plan Opens State Office

Headquarters for the state committee charged with the task of administering the new soil conservation program in Illinois have been opened at 111 North Walnut Street, Champaign, according to Lee M. Gentry, Oregon, chairman of the committee.

In establishing state headquarters at Champaign, consideration was given to the convenience of being near the headquarters of the extension service of the College of Agriculture, University of Illinois, which is cooperating in the educational activities necessary to the success of the new program, Gentry stated.

Other members of the state committee are S. E. Purvines, Pleasant Plains, John S. Bumgarner, McNabb, J. E. Fulkerson, Jerseyville, and J. C. Spitler, state leader of farm advisers, extension service, College of Agriculture. All of the members are farmers and were active in the commodity programs of the AAA which were replaced by the soil conservation plan.

Locally the new program is administered through county agricultural conservation associations, membership of which consists of cooperating farmers who elect township and county officers. County headquarters are located at the county seat.

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Landscaping Of Illinois Rural Homes Is On Increase

With increased farm earnings for the past few years, Illinois farmers and homemakers are turning their attention to improving the looks of the home site, according to Max G. Fuller, landscape gardening extension specialist, College of Agriculture, University of Illinois.

He reports that educational and demonstrational projects in rural landscape gardening are now in progress in 44 Illinois counties with 14 others holding special meetings.

"The purpose of the program is to teach the people of rural Illinois that it is possible to make their homes more attractive, efficient, and valuable by proper landscaping," Fuller said. "A second objective is to demonstrate that this landscaping need not cost more than a reasonable sum of money nor require undue additional hours of work in busy seasons."

A series of informational meetings have been held in 34 counties in 20 of which demonstration projects will be established in the near future. These informational meetings are scheduled by the farm or home adviser and consist of a series of lectures on planning a farmstead, lawns and lawn making, trees and shrubs and flowers and the flower border.

Later three representative farmsteads are selected for demonstrating to the group that a worth-while landscape development of the farm home grounds is within the reach of every farmer. County tours are arranged after the demonstration has progressed sufficiently to show results. After seeing the value of such work, farmers may carry on the activities on their own place themselves or through the services of local landscape architects.

"The demonstration phase, while planned and guided in its development by the landscape extension service, is sponsored as an educational activity," Fuller said. "The demonstration farmsteads will provide actual examples of practical and economical landscape developments of a type within the reach of every average Illinois farmer. In the county tours important pointers and practical methods are stressed so that all of the county group may benefit by the work being carried on."

Demonstration projects are now under way in Adams, Marshall-Putnam, Peoria, Bureau, Woodford, Lake, McDonough, Effingham and Tazewell counties. Work on demonstration farmsteads will soon start in Saline, Pope, Livingston, Hancock, McHenry, Fulton and Vermilion counties.

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4-H Club Members Fitting 200 Lambs For Peoria Show

More than 200 lambs representing some of the best produced this year by the 1,600 Illinois 4-H Club members who are carrying on sheep projects will be entered in the 4-H Club market lamb show at Peoria Union Stock Yards, July 2, according to E. I. Pilchard, extension specialist in junior club work, College of Agriculture, University of Illinois.

"Boys and girls who have followed approved sheep production practices in their projects are looking forward to a profit when the lambs are auctioned at the close of the show and in addition have hopes of winning one or more of the 33 prizes going to the best lambs in three separate classes," said Pilchard, who is superintendent of the show.

The purpose of the show is to center attention of 4-H club members on the value of those breeding and feeding practices which put lambs on the market earlier and bring better prices.

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Co-Op Conference To Spend Full Day On New Farm Plan

Because of the general interest of all commodity groups in the new soil conservation program, a full day will be devoted to discussions of the new plan when the 12th annual session of the American Institute of Cooperation meets at the College of Agriculture, University of Illinois, June 15 to 19.

The AAA general session will start Friday morning, June 19, at 9 o'clock in the Men's New Gymnasium where ample seating is available to accommodate as many as desire to attend.

H. R. Tolley, acting administrator of the Agricultural Adjustment Act, will open the session with a discussion on, "The Contribution of the 1936 AAA Programs to Future National Farm Policies." He will be followed by G. D. Thorne, director of the north central division of the AAA, who will speak on the conservation program as it affects the north central region in which Illinois is located.

The soil conservation program and its long-time significance to livestock producers will be the topic of A. G. Black, chief of the bureau of agricultural economics, U. S. Department of Agriculture.

H. C. M. Case, of the College of Agriculture, University of Illinois, will speak on "Illinois Production Trends in Relation to the Soil Conservation Program."

The afternoon session opens at 1:30 with a discussion of the relation of co-operatives to production problems by Earl C. Smith, president, Illinois Agricultural Association. Smith will be followed by O. B. Jesness, chief, agricultural economics, College of Agriculture, University of Minnesota, discussing agricultural adjustment in its relation to grain production. "The Farmer's Point of View," will be presented by Ralph Allen, Delavan, Ill., farmer.

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Farmers Arming Against Outbreaks Of Grasshoppers

Farmers in different sections of Illinois are preparing for a grasshopper war, following reports that outbreaks of this pest are threatening crops in spotted areas throughout the state. Wherever the grasshoppers are thick, farmers will have to go into action with poisoned baits during the next two weeks while the pests are still small in order to prevent serious damage to crops, according to W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the College of Agriculture, University of Illinois. Use of poisoned bait will be profitable where the grasshoppers are as thick as 15 or more to the square yard.

Either the older form of sweetened poisoned bait or the newer oil bait will effectively check the grasshoppers. The sweetened bait is made at the rate of 25 pounds of cheap bran, 1 pound of Paris green or white arsenic, 2 quarts of molasses and 10 or 12 quarts of water. The dry bran and the poison are first mixed thoroughly, the object being to have some of the poison on every particle of bran. The molasses is added to about 2 quarts of the water, and after this has been mixed the liquid is poured over the bran-poison mixture and the whole worked until all the bran is moistened. Enough water, about 8 to 10 quarts, is then added so that the mixture will ball in the hand when pressed, but separate readily when scattered.

The oil bait, which is superior in some respects, is made the same way as the sweetened bait, except that 2 quarts of cheap lubricating oil of S. A. E. 20 replaces the water and molasses as the wetting agent and attractant. No water should be used in the oil bait.

The bait should be spread at the rate of 10 pounds to the acre in areas where the grasshoppers are feeding. It can be scattered with an end-gate oats seeder or a tin-horn grass seeder or can be spread by hand from horseback or on foot. The bait should not be put out in piles or rows, but should be scattered evenly and thinly.

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## Nation's Farm Leaders Will Be At Institute Gathering

Agricultural leaders from every section of the nation and representing every phase of the farmers' cooperative movement have been scheduled to address sessions of the American Institute of Cooperation at the College of Agriculture, University of Illinois, June 15 to 18, according to H. C. M. Case, head of the agricultural economics department of the college.

Marketing problems, international trade policies, transportation developments, cooperative farm credit and agricultural adjustment will be presented in eight general sessions from the viewpoint both of the technical analyst and the farmer. The program has been so arranged that conference groups may study the data presented in general sessions as related to the individual commodities in which the group is interested.

The first general session, Monday, June 15, devoted to marketing problems will be presided over by L. J. Taber, Columbus, O., master of the National Grange. Included on the program will be C. A. Ewing, Decatur, chairman of the institute; M. W. Thatcher, Washington representative of the Farmers' National Grain Corporation; N. C. Williamson, New Orleans, La., president, American Cotton Cooperative Association; N. L. Allen, New York, general manager, National Fruit and Vegetable Exchange, and C. W. Holman, Washington, D. C., secretary of the institute.

Chester C. Davis, administrator of the AAA, after spending several months in Europe studying market conditions, will discuss European outlets for farm products at the Monday evening general session. E. A. O'Neal, Chicago, president of the American Farm Bureau Federation, will preside over this session which will also include a survey of international trade problems as illustrated by wheat, presented by C. W. Peterson, Calgary, Canada.

Transportation problems will be introduced at the Tuesday general session by J. B. Eastman, Washington, D. C., transportation coordinator, Interstate Commerce Commission. He will be followed by Donald Conn, Chicago, Transportation Association of America; L. J. Quasey, Chicago, commerce counsel, National Livestock Marketing Association; and M. P. Rasmussen, professor of marketing, College of Agriculture, Cornell University, Ithaca, N. Y.

Wednesday's general session will be devoted to fundamentals of cooperation with Dean H. W. Mumford, College of Agriculture, University of Illinois, chairman. Speakers include Donald Kirkpatrick, general counsel, Illinois Agricultural Association, Chicago; Karl Loos, Washington, D. C., and C. C. Teague, Santa Paula, Cal., California Fruit Growers Exchange; and C. E. Huff, Chicago, president, Farmers' National Grain Corporation.

Cooperative farm credit will occupy the Thursday morning general session with F. W. Niemeyer, general agent of the Farm Credit Administration of St. Louis, presiding. Speakers will include commissioners of the FCA in Washington. Thursday evening a general session devoted to another phase of international trade will feature L. R. Edminster, of the Department of State, Washington, D. C.

Friday's general sessions will deal with agricultural adjustments and the new soil conservation program. H. R. Tolley, acting administrator, AAA; G. B. Thorne, director, north central region, AAA; A. G. Black, chief, U. S. bureau of agricultural economics; O. B. Jesness, College of Agriculture, University of Minnesota, St. Paul, and H. C. M. Case, College of Agriculture, University of Illinois, are scheduled to discuss different phases of agricultural adjustment.





Farmer Spends 6 Per Cent Of His Time Away From Farm

Farmers spend but 6 per cent of their time away from the farm in such activities as trading and visiting, reports D. E. Lindstrom, rural sociologist, College of Agriculture, University of Illinois, in bulletin 423, "Forces Affecting Participation of Farm People in Rural Organizations," recently published by the college agricultural experiment station.

Covering 250 farm families located in four townships in the cash-grain area of Champaign and Macon counties, the study shows that more off-the-farm time is spent in trading than for any other one purpose. Next in importance in point of time spent are trips to attend meetings of the church, farm bureau, home bureau, 4-H clubs and farm cooperatives.

"Rural communities must be provided with three basic services if the needs of the people of these communities are to be adequately met," the bulletin states. "These services are education definitely directed toward the enhancement of rural living, the advancement of the business and professional interests of farmers and farm homemakers and the fostering of religious interests.

"Organizations must be means to definite ends if farmers are to take interest in and support them. This suggests that farmers will probably give more and better support to those school programs which train their children adequately for rural living and to those church activities which promote better human relationships in the everyday life of the people and at the same time provide spiritual uplift and moral encouragement.

"Those business and educational organizations will obtain the most support which bring the people together in harmonious working groups and supply information and services that will most effectively promote the welfare of farming and farm life."

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4-H Camp Institute To Be Held At Lake Bloomington

With more than 1,500 Illinois farm boys and girls expected to attend state, district and county 4-H Club camps this year, arrangements have been made for a statewide 4-H camp institute at Lake Bloomington, Bloomington, June 23 to 26, to train 4-H leaders in camp management, it is reported by Miss Mary A. McKee and E. I. Pilchard, extension specialists in junior club work, College of Agriculture, University of Illinois.

Last year 1,195 boys and girls from 31 Illinois counties were registered in 4-H camps, Pilchard reported. A much larger number is expected this year since a number of counties are planning camps for the first time. County camps were conducted by Christian, Kankakee, Kendall, Lee, Macoupin and LaSalle counties last year in addition to the state and district camps.

In training local and county 4-H leaders to serve on camp staffs, the institute at Lake Bloomington will center discussions and demonstrations around such phases of camp administration as camp sites, buildings and finance, health, waterfront, camp menus and problems of social recreation, handicraft and organized games.

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Facts Disprove Many Superstitions About "Mad Dogs"

Although the once dreaded "dog days" are just ahead, more cases of rabies, or mad dog, occur during the spring months than during the "dog days" of July and August, reports Dr. Robert Graham, chief in animal pathology and hygiene, College of Agriculture, University of Illinois.

"In fact the low point in rabies cases comes in July and August with the peak during spring months," Dr. Graham said. "Since the first of the year, 53 dog brains have proved positive to rabies in tests made at the college's laboratory of animal pathology and hygiene.

"Probably no disease has been the basis of any greater number of superstitions and erroneous beliefs than rabies. Rather than depend upon such fallacies as the curative effect of mad stones, the negative reaction of superstitious signs, a person who has been bitten should seek medical attention at once.

"At present no cure is known for rabies after symptoms have developed. The Pasteur treatment, if completed before symptoms develop, will prevent rabies in 95 per cent of cases in which people have been bitten by a rabid animal. The period between the time of infection and the development of symptoms ranges from 14 to 90 days. Longer incubation periods are rare."

It is erroneously believed by some that if persons are bitten by a normal dog they are likely to become rabid if the animal should contract the disease at any future time. The saliva of an animal is seldom infective for a longer period than 10 days prior to the time the animal shows symptoms of the disease.

Another fallacy is the belief that if feathers are stripped from the breast of a living bird and the denuded area applied to the wound made by a dog bite, the fowl will die if the dog has rabies. Dr. Graham points out that no matter how rabid the dog might have been, the chances are the fowl will live. Medical attention and advice should be sought, he says.

Heat, lack of water or putrefied food does not cause rabies in animals. The only cause is an infective virus found in the saliva and other fluids and tissues of the body of a rabid animal. Only occasionally is a rabid animal afraid of water. They frequently seek it and try to drink.

Mad dogs do not always foam at the mouth, nor is foaming at the mouth a certain indication that a dog has rabies, for other diseases exhibit this same symptom, Dr. Graham stated. Furthermore if infectious saliva gets into the wound of a long-haired dog, it will contract rabies just as will a short-haired dog.

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Farmers Pay Out 62 Cents A Head To Keep Poor Cows

Paying 62 cents for the privilege of feeding, milking and caring for a cow was the experience of a number of Illinois dairy farmers last year, reports C. S. Rhode, of the dairy department, College of Agriculture, University of Illinois. Among the 12,478 cows owned by members of dairy herd improvement associations and on test for a 12-month period were 224 which produced less than 150 pounds of butterfat for the year and which therefore cost their owners money. These low producers lacked 62 cents on the average of paying for their feed bill, to say nothing about meeting other costs in milk production, Rhode said. On the other hand, 282 cows in the group on test averaged more than 500 pounds of butterfat and returned an average of \$139 above the cost of their feed bill.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
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## Illinois Farmers Search For Improved Soybean Types

Keeping step with the growing importance of soybeans in industrial utilization, as human food and as a soil builder, Illinois farmers are cooperating with the College of Agriculture, University of Illinois, in a search for varieties best adapted to soil types and climatic conditions in various sections of the state. Illinois is now the first state in the production of soybeans and long has been a leader in the development and testing of new varieties.

Eight varieties are being grown in test plots in Adams county, 11 varieties in Marion county, 9 in Knox, 14 in St. Clair, 20 in Macoupin, 20 in Morgan, 14 in Christian and 10 in Wayne county, reports J. C. Hackleman, crops extension specialist, of the college.

Cooperating farmers in each of these counties have seeded soybeans which were selected by crops specialists of the college as possessing desirable characteristics and showing indications that they might be adapted to the particular section in which they are being tested.

In the late summer or early fall field meetings will be scheduled on farms where the soybeans are being grown in order that farmers in surrounding counties may see which varieties give best results.

"In some counties half of the varieties on trial are of the vegetable type, a result of the growing importance of the soybean as an edible vegetable," Hackleman said. "The vegetable varieties on trial were selected in the Orient by W. J. Morse, of the federal department of agriculture, who sent them to the college. The commercial varieties on trial have been produced by breeders in Indiana, Ohio, West Virginia, Illinois and the federal department of agriculture."

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## Chinch Bugs Thriving, But No General Damage Likely

While general damage from chinch bugs is not likely in Illinois this year, young bugs have been hatching for the past two weeks in the central part of the state, reports W. P. Flint, chief entomologist, College of Agriculture, University of Illinois, and the Illinois Natural History Survey.

"Recent surveys indicate a scattered infestation of chinch bugs this year, particularly over the central and southwest central parts of the state," Flint said. "In this area from 20 to 30 per cent of the wheat fields have enough bugs to cause slight to serious damage to corn adjoining these fields at the time of wheat harvest.

"If dry weather continues, it will pay to watch the wheat fields, as barriers will be needed in some cases if corn adjoins the wheat."

No federal or state appropriations will be available this year for the purchase of material to erect chinch bug barriers, according to a report just issued by the state chinch bug control committee.

Full directions for the construction of and use of creosote-paper barriers is contained in circular 431, "Fighting the Chinch Bug on Illinois Farms." Copies of the circular may be obtained without cost by writing to the College of Agriculture, at Urbana.

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Proper Strawberry Bed Renewal Sound Crop Insurance

The relatively short strawberry crop in Illinois this year, in the opinion of A. S. Colby, chief in small fruit culture at the College of Agriculture, University of Illinois, can be laid to the unfavorable seasons both this year and last year and the fact that strawberry growers generally have not practiced fertilizing, spacing and watering plants.

The most commonly grown small fruit in Illinois, strawberries have a commercial value exceeded only by that of apples and peaches among all fruits. Latest reports show 7,800 acres devoted to commercial strawberry culture in the state with an average annual production of 9,700,000 quarts valued at approximately \$1,143,000. This annual production could be increased four or five times with proper care, Colby believes.

Early summer, as soon as possible after the crop is harvested, is the best time to renew a strawberry bed, he stated. Practices which have been found practical in renewing a patch are described in a new circular by Colby, number 453, "Strawberry Culture in Illinois," which has just been published by the college.

After the bed has been cleaned up, the next step is to thin out the surplus plants. Procedure for both operations is described in the circular which may be had by writing the college at Urbana. As a further step in the renewing practice, Colby recommends spreading a coat of well-rotted manure on the soil and cultivating it in around the plants that remain or a commercial fertilizer may be drilled in or carefully applied by hand near the plants.

"In the absence of adequate rainfall immediately following renovation, irrigation is extremely beneficial in starting new runner plants," he said. "Early rooting of runners makes for a heavier fruit crop the next season."

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Electric Service Means Bigger Returns For Poultrymen

Farmers who are anticipating the extension of electric service to their farms as a result of newly launched rural electrification projects stand to profit by the installation of lights in the poultry house.

Experiment station results have shown that either morning or all-night lights in the poultry house will stimulate egg production and increase returns. In a period from October 2 to February 5, a 46 per cent increase in egg production was noted in flocks with all-night light over flocks without light. Production for the two flocks, handled similarly in all other respects, averaged 57 eggs for each hen in the lighted house and 39 eggs for each hen in the unlighted house. Pullets in the lighted house consumed on the average three pounds more feed for the period than the other pullets.

"A 15 or 20 watt bulb provides ample light for a poultry house 20 feet square," said H. H. Alp, extension poultryman, College of Agriculture, University of Illinois.

"A light in a poultry house in winter months is like a dim light in the hall showing the way to the kitchen pantry," he continued. "Six hours is all that is required for food to pass through the chicken's digestive tract. The light does not interrupt their sleep and permits them to eat when they get hungry. On long winter nights chickens are likely to suffer from lack of feed, and egg production is reduced.

"Besides lighting poultry houses to increase egg production at periods of high egg prices, electricity has proved practical in incubating and brooding."

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Moving Range Feeders Gives Flock Clean "Tablecloth"

A clean "tablecloth," one of the boons to poultry sanitation and control of diseases and parasites, can be provided easily for pullets in the summer by moving the range feeders weekly, though they need be moved only a few feet each time, according to a new circular issued by the College of Agriculture, University of Illinois, entitled "A Manual for 4-H Poultry Club Members."

Prepared by H. H. Alp, extension poultryman, and E. I. Pilchard, extension specialist in junior club work, the manual covers the basic facts needed to guide the 2,500 members of 4-H clubs who are conducting poultry projects in Illinois this year. The section devoted to fundamentals of poultry production and management contains information of value to poultry raisers in general.

"Some shade should be provided for poultry during extremely hot weather," the circular states. "Corn and sunflowers planted in strips near brooder houses provide an excellent type of shade. Allowing the pullets to range in a cornfield is probably one of the most practical ways of providing shade and a satisfactory range on Illinois farms.

"For a hen to lay well she must have at all times a clean supply of water or milk to drink. Lack of water early in the morning or late in the evening, or during the night should lights be used, will result in an unsatisfactory egg production.

"Housing of pullets in winter quarters early in September insures early laying. It is a common mistake to allow pullets to remain on range long past the period in the fall when they should be in their winter quarters."

In addition to a discussion of marketing meat and eggs, the circular also contains practical suggestions on the control of diseases and external parasites of poultry. Requests for copies of the circular should be addressed to the College of Agriculture at Urbana.

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Country Youth Groups To Hold Meet At New Salem Park

An all-state country youth day, first of its kind to be held in Illinois, will be observed Sunday, June 21, at New Salem State Park, in Menard county, by country young people's groups carrying out the project "Know Illinois," according to Cleo Fitzsimmons and G. S. Randall, extension specialists in junior club work, College of Agriculture, University of Illinois.

Young people's groups from Woodford, Montgomery, Livingston, Champaign, DeWitt, Tazewell, Mason and other counties are making plans to attend. A general assembly of the groups is scheduled for 10:30 a. m., near the park museum. Brief addresses will be made dealing with the history of the Lincoln country and the development of New Salem State Park.

"Know Illinois" is one of the projects being carried on by rural young people's groups in several Illinois counties in cooperation with farm and home advisers and the extension service of the College of Agriculture.

"The project is designed for those rural young people who have the initiative and the desire to know more about the history, development and points of interest of their own communities, counties and state," Randall said.

"Among the objectives of the activity is the development of an appreciation for the accomplishments of past generations and the ability to evaluate those of the present."

As the project advances, it is planned that other state parks and points of interest throughout the state will be studied and visited.

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## 85 Per Cent Of Soybean Crop Is Now Used By Industry

"At present 85 per cent of the Illinois 5-year average soybean crop of 9,660,000 bushels is utilized commercially, whereas 10 years ago only 15 per cent of the crop went into industrial uses, said J. C. Hackleman, crops extension specialist, College of Agriculture, University of Illinois.

In his office Hackleman has 50 different products all made from soybeans and all commercially available. It is the further refinement of the two primary products, oil and meal, that makes the many useful products available. Three processes are used to extract oil and leave soybean meal. The oldest is the hydraulic method which leaves a high percentage of oil in the meal, next is the expeller method, while the most recent is the solvent method which leaves just a trace of oil.

"Many products are now being manufactured from soybeans, and more are in the process of development," Hackleman said.

Among the edible products made at present from the whole bean are roasted beans, coffee substitutes, soysauce, soybean milk and cheese. Soybean meal is used for stock feed, fertilizer and for such human food products as flour, sausage flour, macaroni and spaghetti, breakfast foods, infant and diabetic crackers, cakes, bread and muffins. Other edible products from the soybean are salad oils and lard and butter substitutes.

Although the development of industrial products from soybeans has just started, Hackleman has samples of products now commercially available in which soybeans have been used successfully in the manufacture of paint, enamel, varnish, glycerine, explosives, linoleum, water-proof goods, celluloid, rubber substitutes, printer's ink, lighting oil, lubricating oil and soaps.

"Besides playing an increasingly important part in industry, the soybean, a legume, has a place in any soil conservation program," Hackleman said. "Thousands of acres of soybeans will be plowed under as green manure this year as a result of the emphasis placed on this practice by the new farm program."

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## Best Not To Use Metallic Poisons For Cabbage Pests

While the metallic poisons such as arsenate of lead, paris green, calcium arsenate, or the fluosilicates, can be safely used on cabbage during the early stages of growth, their use is to be discouraged because of danger to humans of the poisonous residues, according to a new circular, Number 454, "Disease and Insect Pests of Cabbage and Related Plants," which has just been published by the College of Agriculture, University of Illinois. Suitable substitutes are recommended in the circular, copies of which may be obtained by writing the agricultural college.

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Rural Young Men Given New Venture In Farm Mapping

Illinois young men who expect to make farming their life work will soon be launching out on a new kind of adventure in farming, says G. S. Randall, extension specialist in Junior club work, College of Agriculture, University of Illinois, in announcing a new project, "Know Your Farm," designed especially for rural young adults.

To be carried on through the cooperation of the local farm adviser and the extension service of the agricultural college, the new project which will soon be under way in counties having rural young adult organizations will consist first in obtaining an accurate legal description of the farm to be studied and then making measurements and notes which will be brought together in the form of a map of the whole farm.

"Such a map showing graphically the resources of the farm will perhaps be passed down from generation to generation through the centuries to come," Randall said.

"The venture is especially timely just now, of course, because to plan intelligently for a soil conservation program on any farm it is necessary to have accurate knowledge of its soil resources. Such information will be represented on the map when completed. Testing soil for limestone and phosphate needs, locating terraces, tile drains and ditches and rearranging fields and crops to follow desirable soil-conserving rotations can best be worked out after a good map has once been made."

To assist in making such a study of a farm, Randall, with the cooperation of R. C. Hay, extension specialist in agricultural engineering, and C. M. Linsley, assistant professor of soil extension, has prepared a bulletin describing the procedure to be followed. Copies of the bulletin, "Know Your Farm," will be provided members of the organized groups carrying on the project. Farmers desiring to make such a study independently may obtain a copy of the bulletin by writing the college.

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New Attack Launched Against Poultry Disease Losses

In an effort to boost net returns from the \$40,000,000 worth of poultry and eggs now produced annually on Illinois farms, animal pathologists and poultrymen of the College of Agriculture, University of Illinois have just launched a new attack upon poultry mortality losses. At the present time mortality in farm flocks runs from 10 per cent to as high as 50 per cent in some cases.

"A project will be started," announced Dr. Robert Graham, chief in animal pathology and hygiene, "to determine causes of poultry mortality in commercial and farm flocks in Illinois, to estimate prevalence and significance of poultry diseases in the state and to extend, devise and emphasize preventive measures.

"Effective measures for the control of disease depend upon cooperative effort between the flock owner, the local veterinarians, the diagnostic laboratory and live-stock sanitary officials. The problem of diagnosis can best be handled by the local veterinarian. However, during the past four years, only 12.7 per cent of the 6,800 autopsy specimens sent to the animal pathology laboratory at the College of Agriculture had previously been taken to a local veterinarian. It is hoped that the new project will demonstrate the value of cooperation between flock owners and veterinarians in hygiene, diagnosis and disease control."

It is planned to hold schools of instruction and demonstrations on poultry diseases for interested groups of veterinarians and flock owners in several districts of the state. The schools of instruction will be developed in cooperation with the officers of the local veterinary associations and the demonstrations in cooperation with the farm advisers and veterinarians.



### Heavy Investment In Farm Drainage Systems Neglected

Although Illinois farmers have an investment in public drainage systems and private drainage improvements estimated at \$150,000,000, this investment in recent years has been taken for granted by the average farmer, and the maintenance of drainage improvements has been neglected, says H. D. Fritz, extension specialist in agricultural engineering, College of Agriculture, University of Illinois.

"Proper maintenance of drainage systems is especially urgent now if farmers are to make the most of the soil improvement practices advocated under the new soil conservation program," Fritz said. In the new program legumes occupy an important place, and these crops must have a well drained soil. Application of limestone is another practice recommended in the new plan. To be of maximum benefit in making a good stand of legumes possible, limestone applications must be preceded by good drainage.

"Individual farmers can improve and aid in maintaining their farm drainage systems by careful inspection and correction of any defects that may be present," Fritz continued. "Most damage to crops from lack of drainage will be avoided if the outlet channel into which the drainage system discharges is open, is large enough and has sufficient fall to carry away flood water and surface water."

An inspection of the tile drain outlet will reveal any damage by freezing and thawing, erosion, silting and stoppage by any cause. Surface inlets and catch basins also require periodic inspection. Fritz recommends that each farmer learn the location of his tile drains, as he is then better able to check for sink holes and wet spots.

"Greater productivity from highly fertile lands that previously were thought to be worthless has proved the effectiveness of the drainage systems," Fritz said. "Maintaining the drainage systems will aid in maintaining the productivity that has been obtained by drainage."

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### Gardeners In Thick Of Annual War With Cabbage Pests

Illinois has no plague of caterpillars such as has been reported from Canada, but with the advent of warm summer days there are other pests against which the annual war will have to be waged by farmers and commercial gardeners who raise cabbage, cauliflower, broccoli and similar crops. While not abundant now, insects attacking these crops are expected to increase in numbers later in the season, according to entomologists of the College of Agriculture, University of Illinois.

Most common insects causing damage at this time of year are the imported cabbage worm, cabbage looper and diamond-back moth. Injury from these insects can be prevented by dusting or spraying with derris, cube or pyrethrum, according to a new circular, No. 454, "Diseases and Insect Pests of Cabbage and Related Plants, Their Identification and Control," which has just been issued by the College of Agriculture, University of Illinois.

"Derris or cube are at present the most effective of the non-metallic poisons," states the circular, written by L. H. Shropshire, field entomologist, Illinois State Natural History Survey, and K. J. Kadow, associate pathologist in the college's department of horticulture.

"These two insecticides have the dual advantage of being highly toxic to certain insects such as imported cabbage worm, cabbage looper and diamond-back moth and relatively harmless to man. Against cabbage worms the materials are most effective when applied as a dust during the late afternoon."

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## Farmers' Share Of Food Dollar May Increase To 50¢

If consumer incomes continue to increase, within a few years farmers will be getting 50 cents out of every dollar consumers pay for food, in the opinion of R. W. Bartlett, of the department of agricultural economics, College of Agriculture, University of Illinois.

From 1932 to 1935 cash income to farmers increased from 4.3 billion dollars to 6.9 billions, and the farmer's share of the consumer's dollar jumped from 35 to 46 per cent. The farmer's share for the years 1921 to 1935 averaged 47 per cent.

"Farm prices for foods are directly affected by costs of transporting, processing, and distributing from the producer to the consumer," Bartlett said. "As consumers' incomes decline, the major part of this decline is reflected in lower prices to farmers since distribution costs are relatively inflexible. With an upward movement in consumers' incomes, farm prices rise faster than distribution costs, resulting in an increase in the farmer's share of the consumer's dollar."

In explaining that the farmer's share varies widely for different foods, Bartlett points out that the more direct the flow of the product from farm to ultimate consumption and the higher its unit value, the greater the proportion which farmers receive. The case of butter and wheat is cited, since the course of butter from the farm to the table is much more direct than that of wheat and retail bread. Last year farmers received 72 per cent of what consumers paid for butter, in contrast with only 18 per cent for bread.

Illinois farmer groups, in an effort to improve the distribution system and obtain as large a share as possible of the food dollar, have organized producers' cooperative associations having as one objective the lowering of marketing costs, he said. In the marketing season of 1934-35, Illinois farmers sold approximately \$140,600,000 worth of farm products cooperatively, or about two-fifths of their total sales of these products. For the country as a whole about one-sixth of the total sales of farm products are made through cooperative groups.

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## Apples And Other Illinois Fruit Crops To Be Light

Present prospects are for a light Illinois crop of apples this year of not more than one-fourth to one-third of a normal harvest for the state as a whole and including all varieties, reports J. W. Lloyd, chief in fruit and vegetable marketing at the College of Agriculture, University of Illinois.

"The unusually heavy crop of 7,208,000 bushels in 1935, combined with poor foliage development, resulted in a poor set of buds and light bloom in 1936," he said. "Severe frosts during the period of bloom and fruit-setting further reduced the prospective yield."

The Illinois peach crop this year is restricted to a few counties in the extreme southern end of the state, and even in that area there will be only about 10 per cent of a full crop. The 1936 peach crop is estimated at 225,000 bushels, the smallest since 1924 with the exception of the complete failure in 1930 and the 188,000 bushel crop of 1932.

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Demand For Farm Products Has Reached New High Level

Paced by increased output of non-agricultural industries, demand for farm products has shown substantial further improvement during the past year, with rising business activity for the past two months bringing demand to a new high level for the recovery period.

This optimistic situation is reviewed in the June issue of Illinois Farm Economics, a monthly circular published by the department of agricultural economics, College of Agriculture, University of Illinois. It is anticipated that demand will be maintained close to the present level during the summer months with lower prices in prospect for later in the year, the circular says.

"As a result of increased supplies of some farm products, especially meat animals, prices of farm products may average somewhat lower during 1936-37 than during 1935-36," the circular says. "Illinois farmers may expect somewhat lower prices for hogs and cattle during the coming year."

However, the normal seasonal advance is expected during the late summer and fall for better grades of cattle after the present congested market has cleared. Heavy losses of early spring pigs point toward the usual summer rise in price unless offset by more than the usual amount of early marketing. Lower prices are in prospect for the fall as a result of increased domestic production.

Demand for dairy products has continued to improve with increases in consumer incomes, and larger quantities have moved into channels of trade at higher prices than a year ago.

"The 1936 season in Illinois has been favorable for raising chickens," the circular states. "If feed prices do not get unduly high, early-hatched pullets should be good property to own, whereas flock owners depending upon late-hatched or poorly grown pullets may find it difficult to more than break even on egg receipts."

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Illinois Farmers Boost Corn But Cut Soybean Acreage

Permitted by weather conditions to plant the crop acreages they desired, Illinois farmers have increased corn acreage materially and reduced soybean acreage from last year's high, reports Illinois Farm Economics, a monthly circular issued by the department of agricultural economics, College of Agriculture, University of Illinois.

In the central part of the state farmers have indicated plans for as large an acreage for 1936 as for the average of the years 1932-33 when the acreage was very large. If average yields of sound corn are secured on the increased corn acreage, and with an estimated increase of only 5 per cent in the numbers of livestock, a relatively low price for corn is anticipated.

In Illinois 1,600,000 acres of soybeans were indicated for 1936, a decrease of 200,000 acres from 1935. Several unusual factors accounted for the abnormally high acreage of soybeans in 1935, and with the absence of these factors this year, an acreage reduction occurred.

"The state has an exceptionally good stand of other legumes as compared with recent years," the circular states. "For this reason the demand for soybean hay will be less and therefore a larger percentage than normal of the soybean acreage will be harvested as grain.

"The condition of tame hay on May 1 was about 78 per cent of normal compared with 75 per cent a year ago. With less than average numbers of livestock to be fed from the 1936 hay and grain crop, production probably will result in abundant feed supplies as compared with livestock numbers."

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Spreader Trucks Speed Spreading Of Needed Limestone

Reaching the goal of 750,000 tons of limestone spread on Illinois farms in the next twelve months will be easier if more farmers follow the lead of Effingham county where seven trucks equipped with limestone spreaders are busily sweetening acid soil, according to C. M. Linsley, soils extension specialist, College of Agriculture, University of Illinois.

"These trucks, hauling limestone from the railroad station or local quarry and spreading it on the land at reasonable cost, are taking the worry and hard work out of liming," Linsley said. "Spreading from the truck takes little additional time and saves piling the limestone in the field and later handling it twice with a shovel."

James Prim, of Effingham, is liming the entire 100-acre farm which he acquired recently, Linsley reported. He has already spread 10 carloads, or 475 tons, of limestone this year, using trucks equipped with limestone spreaders.

Another Effingham county farmer, C. E. Mitchell, has applied three carloads of limestone recently. The cars were shipped to come at two-day intervals, and one truck spread the 180 tons in a week. Mitchell applied the limestone to all of his corn ground this spring where it will be mixed thoroughly with the soil by cultivation.

"The emphasis of the new soil conservation program on legumes has increased the interest of Illinois farmers in applying limestone," Linsley said. "However, many farmers sow at least 40 acres of clover each year on land that is too acid to grow these crops successfully. This is an expensive practice. Since, according to present regulations a good stand will constitute performance under the new farm program, it will pay to test the soil for limestone needs and correct the acidity prior to seeding legumes."

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Rural Young Adults No Longer The "Forgotten" Folks

Rural young adults will no longer be the forgotten men and women so far as community life and social activities designed especially for them and their benefit are concerned.

To ascertain to what extent these young people are being reached by extension projects and other educational and recreational programs, a survey of all rural young adults is being made by county program building committees and rural young adult groups in 10 Illinois counties. The surveys are being made in cooperation with the local farm and home advisers and the extension service of the College of Agriculture, University of Illinois.

The survey is already in progress in Ford, Greene, Franklin, Hamilton, Jefferson, Clinton, Fayette, Morgan, Douglas and Piatt counties. It is anticipated that similar surveys will be started in other Illinois counties in the near future, according to G. S. Randall and Miss Cleo Fitzsimmons, extension specialists in junior club work, of the agricultural college, who are directing the surveys.

Rural young adults are those who are not attending school or college, who are no longer eligible for 4-H club activities and who are not married. If a sufficient number of these young people in any county are not reached by any program, they will be assisted in working out a program of their own, Randall stated. The survey will serve to prevent duplicating activities which are being carried on by other organizations.

"In the past these young adults have been more or less neglected, since they were too old for 4-H club work and not yet ready for other projects sponsored by the extension service," he said. "The rural youth organizations as now planned will provide them with an opportunity for wholesome recreation and education, and with the minimum guidance, they will be able to direct their own social and community activities without the dominance of commercial interests."

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Number 28

## Miss Lita Bane Is Named New Head Of Home Economics

Miss Lita Bane, eminent home economics authority, educator and writer and formerly a member of the university staff for five years, will return September 1 as head of the department of home economics in the College of Agriculture, University of Illinois. Her appointment as professor of home economics and as vice-director of home economics extension, as well as head of the department, has just been approved by the board of trustees upon recommendation of President A. C. Willard and Dean H. W. Mumford of the agricultural college.

At present Miss Bane is in Washington, D. C., serving as collaborator in parent education for the National Council of Parent Education and the extension service, U. S. Department of Agriculture.

She succeeds Miss Ruth A. Wardall, head of the department since 1921, who recently resigned that position because of ill health. Miss Sybil Woodruff, chief in foods, has been serving as acting head of the department.

Miss Bane was the unanimous choice of a committee selected by Dean Mumford to advise with him upon the selection of a candidate. Members of the committee were Prof. H. P. Rusk, head of the department of animal husbandry, who represented the executive committee of the agricultural college; Mrs. Kathryn Van Aken Burns, state leader of home economics extension; Miss Mary C. Whitlock, assistant professor of home economics, and Miss Harriet T. Barto, assistant professor of dietetics, who were selected by members of the department of home economics of the rank of assistant professor or higher.

"Outside the university, as well as within our own staff, the preponderance of opinion was that Miss Bane was the most logical person in the United States for the position," Dean Mumford said. "Being a native of Illinois, an alumna of the university, an eminent authority in her field and one who is acquainted with campus affairs, she is admirably suited to the position."

Miss Bane was born and reared on a farm near Dana, LaSalle county, and was graduated from the University of Illinois with the degree of bachelor of science in home economics in 1912. She obtained her master of arts degree from the University of Chicago in 1919, and later, in 1925-26 continued her graduate studies both at the University of Chicago and at Columbia University. She was assistant state leader of home economics extension in Illinois from 1918 to 1920 and from 1920 to 1923 served as state leader and as assistant professor of home economics.

She left Illinois in 1923 to serve for two years as executive secretary of the American Home Economics Association, Washington, D. C., and then for the next four years was a member of the staff at the University of Wisconsin, Madison, serving first as assistant professor of home economics and then as associate professor in charge of university extension in home economics and health. While a member of the Wisconsin staff and following her two-year term as secretary, she served for two years as president of the American Home Economics Association.

In 1929 she served as associate editor of the Ladies' Home Journal.

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### Meadows and Oats Fields Come To Aid Of Dry Pastures

With the drouth resulting in a shortage of pasture in most sections of Illinois, E. T. Robbins, livestock extension specialist, College of Agriculture, University of Illinois, states that farmers are turning livestock into meadows and oats fields.

"Some waste results when livestock are turned into tall growths of clover or mixed clover and timothy, but the stock will harvest a crop and make good use of it," Robbins said. "When the regular hay land is used in this manner for pasture, the usual practice is to depend upon soybeans or oats for hay.

"Oats cut when they start to form seed make a good quality hay and a good acre yield. With oats as cheap as they are, they may pay better for hay or even for pasture than they will for cutting and threshing."

Many fields of alfalfa and red clover and also of mixed clover and timothy already have been cut for hay in various sections of the state. Subsequent growth ordinarily would be used for hay or in some cases be harvested for seed. However, if stock is turned in to graze whatever growth may exist, Robbins states that it usually pays in such an emergency as a drouth.

When for such cause more land is included in the farm's pasture area, it often happens that rains later on produce more than the normal amount of grazing late in the season.

"This extra pasture crop can be handled by the stock if they are left on grass longer," Robbins said. "Most Illinois farmers consider the pasture season ended along in October. However, when a considerable growth of grass or legumes is still left upon the land at that time, the stock can make good use of this forage by grazing on into the winter months if necessary in order to gather the crop."

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### Wheat Cleaning Equipment Saves Heavy Degrading Loss

With the approach of the Illinois wheat harvest which averages annually 33,075,000 bushels valued at \$20,766,000, farmers are turning to wheat cleaning and treating equipment in an effort to protect the quality of the crop and maintain its market value, reports J. C. Hackleman, crops extension specialist, College of Agriculture, University of Illinois.

Six portable seed cleaning and treating machines are now available in southern Illinois as a result of a wheat improvement program being carried on in that section through the cooperation of the Illinois and Indiana millers, local farm advisers and the extension service of the agricultural college.

"Farmers who take advantage of these modern seed cleaning machines are better able to market their grain without having it degraded because of the presence of undesirable qualities," Hackleman said.

Last year 970 carloads of wheat from Edwards, Gallatin, Lawrence, Wabash, White, Jackson, Madison, Monroe, Randolph, St. Clair and Union counties were graded down because of mixed wheat, smutty wheat, dockage, garlic and onions, he stated.

"During 1934 and 1935 the financial loss to wheat producers in these 11 counties because of the presence of garlic alone amounted to more than \$86,000, representing a discount of 5 cents a bushel," Hackleman said. "Use of seed cleaning equipment will largely prevent such losses in the future. It is hoped that a number more machines will be added this year not only in southern Illinois, but also in other sections of the state. The equipment also can be used to clean and treat oats and barley and clean soybeans."

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### THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth and change. From the first settlers to the present day, the nation has evolved through various stages of development. The early years were marked by exploration and settlement, followed by a period of rapid expansion and industrialization. The American Revolution was a pivotal moment in the nation's history, leading to the establishment of a new government and the declaration of independence. The 19th century was a time of great change, with the Civil War and the Reconstruction era shaping the nation's future. The 20th century saw the rise of the United States as a world power, with significant events such as World War I and World War II. The present day is a time of continued growth and change, with the nation facing new challenges and opportunities.

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No Trend To Decentralization Seen In Meat Packing

Doubt if there has been any time in recent years when control of the nation's meat-packing industry was less decentralized than now, is expressed in Illinois Farm Economics, a monthly publication issued by the department of agricultural economics, College of Agriculture, University of Illinois.

Pointing out that decentralization in operation should be carefully distinguished from decentralization in ownership and control, the circular stated that the trend is clearly toward centralization of control, despite references to decentralization which continue to be heard.

Recent acquisition by Armour and Company of a number of plants previously independent, among them the important Decker plant, at Mason City, Ia., is cited as evidence of the centralization of control.

Financial reports made annually to the Packers and Stockyards Division, Bureau of Animal Industry, U. S. Department of Agriculture, show an increased number of concerns slaughtering livestock in the United States up to 1930. However, since that time the number has declined.

"While this decrease in number of slaughtering concerns might result either from sale or liquidation, it is known that numerous concerns have sold out to others already in the business," the circular stated.

"Distribution of earnings by meat packing industries is obviously significant. In 1933 the 10 largest concerns showed 99 per cent of the total net profits reported by all slaughterers. In 1934, the 10 largest concerns showed 94.6 per cent of the total net profits."

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Drouth Increases Danger To Stock From Plant Poison

Danger of plant poisoning which annually kills a million dollars' worth of Illinois livestock grows greater as the extended drouth adds to the poor pasture condition of mid-summer, said J. J. Pieper, associate professor of crop production, College of Agriculture, University of Illinois, in warning Illinois farmers against pasture practices which fail to take poisonous plants into consideration.

"As pastures get short, livestock will eat almost any vegetation, including such poisonous plants as black night shade, white snake root, water hemlock, whorled milk weed and jimson weed," Pieper said.

"To prevent serious losses of valuable livestock, the poisonous plants should be eradicated or the animals kept away from them," he continued. "In following either of these practices, the farmer must first be able to recognize poisonous plants when he sees them. The local farm adviser can assist him in becoming acquainted with the more common poisonous plants or he may send any suspicious specimens to the College of Agriculture at Urbana for identification."

Pieper particularly warned against the practice of turning livestock into vegetable gardens or throwing weeds from the vegetable garden across the fence to hungry animals. A cultivated place, rich in soil fertility, is ideal for black night shade, he explained. The plant is also found near old straw stacks and fence rows of cultivated fields. White snakeroot is found in timbered areas and water hemlock in damp places.

The practice of permitting livestock to graze the foliage of trees is also fraught with danger, he pointed out. Trees such as buckeye, wild cherry, locust and Kentucky coffee tree are poisonous to livestock. He also warned against trimming laurel, lilac and other decorative plants and feeding the branches to livestock.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
Experiment Station, and Extension Service

Volume XIX

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Number 29

## District Meets Challenge Best Efforts of 4-H Girls

Focusing their attention upon nine cities in Illinois, more than 500 4-H club girls of the state are eagerly awaiting the third week in July. With their district contests, the last stepping stone to the State Fair, scheduled at these nine points in the state, 4-H county winners in health, in team demonstration work, in clothing judging and in complete outfit exhibits are coming together for a final show down.

Out of these "contests for winners only," will come the lucky representatives who will make their next stop the State Fair, and their next contest the high point of their 1936 4-H club year.

The first district contest is scheduled for Tuscola, July 21, bringing together Vermilion, Champaign, Piatt, Macon, Shelby, Moultrie, Cumberland, Coles, Douglas and Edgar counties, according to Miss Mary McKee, extension specialist in junior club work, College of Agriculture, University of Illinois.

Meeting at Olney, July 22, will be county winners from Clark, Crawford, Jasper, Effingham, Fayette, Clay, Wayne, Richland, Lawrence, Edwards and Wabash counties.

Harrisburg has been scheduled as the meeting place for Hamilton, White, Williamson, Saline, Gallatin, Johnson, Pope-Hardin and Massac counties on July 23.

On July 24, St. Clair, Monroe, Washington, Jefferson, Randolph, Perry, Jackson, Union, Alexander-Pulaski and Franklin counties will come together at DuQuoin.

Blue ribbon winners from Calhoun, Greene, Jersey, Macoupin, Madison, Montgomery, Bond, Clinton and Marion counties will compete at Edwardsville, July 25, while Pontiac has been named as the meeting place for representatives from Marshall-Putnam, Woodford, Tazewell, Logan, DeWitt, McLean, Livingston, Kankakee, Iroquois and Ford counties on July 27.

July 28 will see the finalists for Boone, McHenry, Lake, Cook, DuPage, Kane, DeKalb, LaSalle, Kendall, Grundy and Will counties meet at Geneva.

Jo Daviess county will send its contestants to Dixon on July 28, as will Stephenson, Winnebago, Ogle, Carroll, Whiteside, Lee, Rock Island, Henry and Bureau counties.

Galesburg will be the scene of action, July 29, for girls from Mercer, Henderson, Warren, Knox, Stark, Peoria, Fulton, McDonough, Hancock and Mason counties; while Jacksonville, July 31, will see the last district contest with entrants from Adams, Pike, Brown, Schuyler, Cass, Menard, Christian, Sangamon, Morgan and Scott counties.

Also preparing for the State Fair, will be 75 county dress revue contestants, according to Miss McKee. While dress revue contestants will not compete at the district contest, they will receive personal suggestions on their outfits, and each county winner in this event is being urged to attend her district meet.

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5,000 Acres Of Hybrid Seed Corn Growing in Illinois

With more than 5,000 acres of hybrid seed corn being grown in the state this year, Illinois farmers should have a supply of hybrid seed for next year four or five times as large as was available for the present season, states J. C. Hackleman, crops extension specialist, College of Agriculture, University of Illinois, and secretary of the Illinois Crop Improvement Association.

Fields of the more than 150 hybrid seed corn producers of the state will be visited a number of times within the next few weeks by inspectors representing the crop improvement association which certifies the seed before it is offered for sale.

Before starting on their inspection tours, the inspectors attended an intensive two-day school of instruction recently at Urbana and Bloomington. Those assisting in the school of instruction were C. M. Woodworth, W. J. Mumm, George H. Dungan and Hackleman, of the agricultural college, and J. R. Holbert, senior agronomist, U. S. Department of Agriculture, who had charge of the meeting at the federal plots at Bloomington.

In visiting fields throughout the state the inspectors will make sure that the hybrid seed corn is being produced in fields well isolated from other corn and that there is no evidence of mixture which would cause the plants to be distinctly off type. They will also make sure of the completeness, thoroughness and timeliness of de-tasseling.

"The Illinois Crop Improvement Association is making every effort to insure farmers a high grade of hybrid seed corn," Hackleman said.

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Livestock Farmers Warned To Watch For Screw Worms

Illinois cattle feeders who buy their cattle direct from southwestern states are warned to watch for infestations of screw worm which last year were responsible for injury to more than 6,000 head of livestock in the state. Warning to this effect has just been issued by W. P. Flint, chief entomologist, College of Agriculture, University of Illinois and of the Illinois State Natural History Survey, and Dr. Robert Graham, chief in animal pathology and hygiene of the college.

"A determined effort is being made by the federal Bureau of Entomology and Plant Quarantine in cooperation with the State Natural History Survey and the Illinois Agricultural Experiment Station to prevent screw worm infestation in Illinois where it is doubtful if the fly overwinters," they said.

"A representative of the federal bureau will work in Illinois this summer and fall in an attempt to check any possible infestation and to prevent the spread of the insect by thorough treatment of infested animals as soon as they are found. A close inspection is made of animals as they come through the regular channels such as the stockyards at Chicago, Kansas City, Omaha and other places.

"Buyers of feeder cattle can have their cattle inspected before shipment by writing Dr. W. E. Dove, 1010 Travis Building, San Antonio, Tex. Since inspectors are located at a number of places throughout the southwest, it takes only a short time to get inspection after Dr. Dove is notified. Any maggot infestations should be reported to the local veterinarian, farm adviser or to the state entomologist, Urbana."

Screw worms may attack any warm-blooded animal, but most reported cases have been cattle, sheep, hogs, horses and dogs. In adult livestock the most common point of attack is a wound. Hatched from eggs laid in a wound, the maggots penetrate sound tissue, sometimes destroying flesh until bones are laid bare.

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UNITED STATES DEPARTMENT OF JUSTICE  
FEDERAL BUREAU OF INVESTIGATION

MEMORANDUM FOR THE DIRECTOR  
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Dairy Manufactures Conference To Be November 11-14

A golden jubilee banquet in honor of those Illinois dairy plant representatives and officials who have served the dairy industry for 50 years or more is one of the features of the annual dairy manufactures conference sponsored November 11 to 14 by the College of Agriculture, University of Illinois, H. A. Ruehe, head of the dairy husbandry department, announced.

In past years the conference has been held in January. However, Ruehe lists the appeal of crisp November weather and an opportunity to see the Illinois-Ohio State football game as chief reasons for changing the date.

"Despite the blizzards and sub-zero weather of January, past conferences have attracted from 150 to 200 visitors from all sections of the United States," he said. "We anticipate a much larger attendance this fall."

Opening day will be devoted to registration and discussions of problems pertaining to the operation of the dairy control laboratory and to the sanitary inspection of dairy plants. Market milk and cheese industries will be under consideration the second day, with ice cream and butter industries holding the limelight on the third day.

Arrangements are being made to have a nationally recognized authority as speaker for the golden jubilee banquet on the evening of the third day, Friday, November 13.

Marketing problems of the dairy industry will be considered Saturday morning, with the conference adjourning in time for those who desire to attend the annual Dad's Day football game between Illinois and Ohio State.

Ruehe is encouraging all dairy plant representatives and officials who plan to attend the November conference to make reservations early in order that desirable seats may be obtained for the football game.

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Carefully Selected Vegetables Make Winning Displays

With the approach of the season for county and community fairs, Lee A. Somers, extension specialist in vegetable gardening, College of Agriculture, University of Illinois, warns that no exhibitor of vegetable garden products can hope to win the coveted blue ribbon against worthwhile competition if he does not choose his specimens carefully. Other things being equal, and varietal characteristics considered, specimens with the more intense or deeper shades of color are preferred to those with lighter or duller shades, says Somers in his new circular, Number 455, "Vegetable Exhibitions, Their Planning and Management," which has just been issued by the agricultural college.

-M-

Women Shoppers Given New Purse-Size Guide Booklet

When a group of women want information on a subject they go after it. That is the reason why a new little pocket pamphlet entitled, "How to Buy Values in Textiles and Clothing," has just come off the press from the College of Agriculture, University of Illinois and is being made available for any homemaker in the state. The booklet, a purse-size handy guide for buying hosiery, sheets, underclothing, and dresses, is the result of a demand by Illinois homemakers to have reliable consumer information.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

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Number 30

## State-Wide Short Course For Local Leaders Aug. 3-9

A state-wide summer short course for community leaders from all sections of Illinois is scheduled for August 3 to 9 at East Bay Camp, Lake Bloomington, according to an announcement by D. E. Lindstrom, rural sociologist, College of Agriculture, University of Illinois.

The seven-day course, first of its kind to be held in the state, is sponsored jointly by the extension service of the agricultural college and the Illinois Church Council. Registration is limited to 150 by camp accommodations.

Five courses will be offered each morning of the session, including social planning in the rural community, new meanings of adult education, how social and economic cooperation may develop, activities for young people and how to plan them, and constructive uses of leisure time.

Each afternoon, delegates will meet in groups to discuss the subject matter presented in the morning. The remainder of the afternoon will be devoted to recreational activities for those interested in folk and small group games, dramatics, music, nature exploration, arts and crafts, children's work and library demonstration.

Evening programs will consist of lectures, the first of which will be delivered by H. C. M. Case, head of the department of agricultural economics, of the University of Illinois, College of Agriculture. On Saturday evening, the Livingston county chorus will present the cantata, "The Harvest."

A total of 55 speakers and leaders will be represented on the week's programs. Lindstrom is camp director; P. G. Van Zandt, of Joliet, is camp dean and Frank H. Breen, Bloomington, registrar.

Copies of the week's program may be obtained by writing the College of Agriculture at Urbana.

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## Twenty-Five Counties Schedule Farm Management Tours

Conditions and practices which last year brought about an increase in cash income averaging \$792 for each of the 1,639 Illinois farms cooperating with the College of Agriculture, University of Illinois in keeping farm account records will be pointed out in a series of farm management tours soon to be sponsored by the extension service of the agricultural college in 25 Illinois counties.

Randolph county has set August 5 as the date for its tour; Madison, August 25; Christian, August 27; Sangamon, September 8; Morgan, September 9; McDonough, September 11; White, September 14; Clark, September 16; Iroquois, September 17; and Edgar, September 22. Definite dates for tours have not been decided upon by Jo Daviess, Carroll, Rock Island, Henderson, Hancock, Bureau, Lee, LaSalle, DeKalb, Grundy, Marshall-Putnam, Woodford, Livingston, McLean, Tazewell and Kankakee counties.

The tours, which will be in charge of the local farm advisers, are planned by the extension service of the agricultural college to demonstrate and discuss factors affecting earnings for different types of farming that prevail in these counties.

-M-





Farm Drainage Remains Problem Despite Lack Of Rain

Believing that the best time to repair the roof is when the sun shines and not after the rains start, E. W. Lehmann, head of the agricultural engineering department, College of Agriculture, University of Illinois, points out that even in a drouth a distinct problem exists throughout the state in the maintenance of drainage improvements.

"The problem is three-fold in that it involves technical, financial, and legislative consideration in various of its phases," Lehmann said. "Illinois with its 150 million dollars invested in private and public drainage improvements is a good example of the result of man's efforts to improve upon the advantages offered so freely by nature.

"However, as in other states, the tremendous capital investment is endangered by lack of maintenance. Economical methods will go a long way to help the farmer and district officials provide good maintenance at low cost."

To protect the investment of Illinois farmers in drainage systems, engineers have made a study of methods of maintaining tile drains, open ditches, levees, pumping stations and other drainage structures. Results of this study are made available through the extension service of the agricultural college and local farm advisers.

Various financial agencies, including the Reconstruction Finance Corporation, are now aiding in the rehabilitation of drainage enterprises, Lehmann stated.

A study of drainage legislation with a view to outlining amendments to existing laws covering procedure for refinancing and reorganizing drainage districts would be valuable, he believes. However, he states that Illinois drainage legislation, although needing some minor revision, has been a beneficial factor in the advanced development of the drainage enterprise in this state.

-M-

White County Farmers Start Search For Better Wheat

In an effort to obtain as efficient and low cost production as possible of the 30,000 acres of wheat they seed annually, White county farmers are launching a three-year project of wheat varietal tests, Farm Adviser R. H. Clanahan reports.

Five high yielding varieties, more nearly adapted to White county conditions, will be planted on five different soil types found in the county. These plots will consist of an acre of each of the varieties planted separately.

They will be inspected in the spring of 1937 and threshed separately, making it possible to check both type of growth and yielding ability. Cooperating farmers have agreed to carry on the tests for a three-year period.

Varieties to be tested will be seeded on sand land, richer dark loams, light colored silt loams, so-called bench or terrace land and the hill lands of the county. The studies are part of a wheat improvement project being carried on throughout the state by the extension service of the College of Agriculture, University of Illinois.

-M-

Fresh Soybeans Cooked Like Other Beans Used Green

Fresh soybeans may be cooked like limas or any other variety of shell beans used green. The green beans shell more easily if the pods are first boiled for about three minutes. The average cooking time for boiling or steaming green soybeans is about 30 minutes. They may then be served simply with melted butter or white sauce, or they may be scalloped or used in salads.

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Summer Stains Vanish Easily If Proper Methods Used

Homemakers are fortunate this summer, for style decrees many light colored summer cottons which, if not white, are at least guaranteed color fast and washable. Therefore when stains and spots make unhappy landings upon the family clothing, quick work and the right remedies will make a speedy removal.

"Spots," says Miss Edna Gray, home economics extension specialist in clothing, College of Agriculture, University of Illinois, "get quite 'set' in their ways if allowed to remain on the fabric for any length of time."

Often changes in the character of the stain as a result of drying, exposure to the air, ironing or washing in hot water may require the use of a stronger chemical and thus may injure the fabric, she warns.

"Many home remedies may be used," says Miss Gray. "For grass stains or the peculiar color which comes off the dandelion, hot water and soap may be the answer, or a bleach may be applied to remove any remaining traces of the stain. If the garment will wash, warm water and soap plus a little naphtha or kerosene and thorough rubbing will take out grease stains. However, the garment should be cleaned out of doors away from all fires."

Carbon tetrachloride, the non-inflammable cleaner, is also a safe and effective agent to take out grease and oil spots. The first step is to turn the garment wrong side out so that the spot on the outside of the dress will not be rubbed through the fabric, but into a cloth which has been placed under the stain. The stain is then gently sponged with a cloth soaked in the solvent. A little talcum powder sprinkled around the edge of the stain will prevent the spreading of the grease, says Miss Gray.

Chewing gum can be persuaded to release its clinging hold on the garment by a touch of ice, suggests Miss Gray.

Boiling water brings the best results when clear tea or coffee is spilled on the tablecloth. Bleaching is an added precaution if the material is white, but if cream has been used in either drink, Miss Gray thinks it is best to first wash the spots with cold water and then try a boiling solution.

Egg comes off when cold water is used. Fruit and fruit juices, if the stains are fresh, will do a complete "fade away" when boiling water is poured through the stain.

Ice cream stains call for double attention because they contain both flavorings and a greasy substance. The ice cream, itself, may be removed by cold water, but the homemaker must resort to her method for removing fruit stains or chocolate, if the flavorings are left behind. On washable materials chocolate comes out effectively when soap and hot water is used. Otherwise wood alcohol and ammonia or some grease solvents may be used.

For fly paper, Miss Gray suggests carbon tetrachloride. Fresh mildew meets its match in soap and water or sour milk or possibly bleaching, but once mildew is far along, nothing much can be done to save the fabric, says Miss Gray.

-M-

Heating Problem In Apple Washing Attacked By U. Of I.

Higher quality apples for consumers and less trouble for growers in meeting recently imposed spray residue regulations are objects of a new bulletin, "Heating Systems for Apple-Washing Machines," just released by the College of Agriculture, University of Illinois. R. H. Reed, of the department of agricultural engineering, is author.

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THE LIBRARY OF THE  
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Number 31

## Diversity Cushions Drouth Losses On Illinois Farms

Even with late harvested crops in serious condition, pastures bare and gardens burned, Illinois farmers still have an advantage over farmers in some other states where farming is less diversified.

This fact is pointed out in Illinois Farm Economics, a monthly publication of the department of agricultural economics, College of Agriculture, University of Illinois.

"However, as between individual farms," the circular states, "the one which has had superior management in its organization and handling has the greater staying power in the face of handicaps."

Early crop reports indicate that both yields and quality of winter wheat are generally good. The quality of oats and early hay are good, but yields are only fair. Damage to corn varies greatly, depending chiefly upon the time of planting. The growth of soybeans is being seriously retarded, thus threatening the productive capacity of the plants.

Winter wheat estimates for 1936 exceed the five-year average production for the years 1928-32 in Illinois, Indiana, Ohio, Iowa and Missouri, but are only 82 per cent of average for the entire country.

Since the effects of the drouth and insect damage are never distributed evenly, the farmer who suffers a partial loss of his crop can never be sure of a price advantage for the remainder of his crop which will offset the loss in yield, the circular explains.

Fruit prospects for the country as a whole are reported to be better than those for Illinois. Illinois' apple crop is said to be 40 per cent of normal, while that of the nation is 62 per cent normal. Peaches in Illinois are 21 per cent of normal and 73 per cent for the United States. Pears are 51 and 101 per cent, respectively.

While some desirable beef breeding cows with calves have been sacrificed from areas most affected by the drouth, there is little need for worry that drouth cattle will upset the market.

The federal department of agriculture has arranged to support the public cattle markets wherever drouth cattle appear in sufficient numbers to depress cattle prices. The department has contracted with packers to slaughter and process such cattle. The beef will be turned to relief agencies.

"Important cattle range sections are not affected by the drouth," the publication asserts. "Texas, Arizona, much of New Mexico and the inter-mountain regions are in good shape. In the cattle country the most serious drouth areas are reported in eastern Montana, the Dakotas, northwestern Nebraska and northern Wyoming.

"Some Illinois feeders, having feed and water available, are filling a part of their feeder requirements during this period of uncertainty."

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### Fall Seedings of Legumes Needed For Forage In 1937

Since legumes planted this spring have failed over much of Illinois because of the drouth, fall seedings of red clover, sweet clover or alfalfa made as soon as rains permit will be necessary if a legume shortage in 1937 is to be avoided, warns J. C. Hackleman, crops extension specialist, College of Agriculture, University of Illinois.

"It is especially important this year that a good seed bed be prepared, since all possible moisture must be made available," he explained. "Where the legume is to be seeded following a small grain crop which was combined, it is best to remove the straw from the land before attempting to disc up a seed bed. If preparations are started immediately, the seed bed should be ready as soon as the rains come.

"A successful summer seeding of legumes is more nearly assured if the seed bed is allowed to lay for a week after it is thoroughly soaked by rains, then cultivated to kill weeds and seeded immediately. Seeding should be done as early in August as rains permit.

"Those who plan to seed rye or winter wheat this fall on land that has been limed can obtain a good stand of sweet clover, which should be more drouth resistant than spring-seeded sweet clover, by planting un-hulled seed this fall or early winter on the rye or wheat ground. The seed will be worked into the ground by rains, freezes and thaws and will start growing early in the spring. Un-hulled seed requires 20 to 30 pounds to the acre."

Grass mixtures such as timothy and red top may be planted this fall to provide fall and winter forage, to be followed by seedings of red, alsike or sweet clover next spring.

If tests show that fields on which legumes are to be seeded this fall are in need of limestone, the limestone, if time permits, may be broadcast ahead of the seeding. As added insurance, dry lime at the rate of 400 pounds to the acre may be drilled into the rows with the seed.

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### State 4-H Club Livestock Judging Contest August 3

More than 150 livestock judging teams representing the 25,000 members of 4-H clubs of Illinois are expected to take part in the annual state 4-H livestock and dairy judging contest at the College of Agriculture, University of Illinois on Monday, August 3, E. I. Pilchard, extension specialist in junior club work, reports. Last year 131 teams representing 58 counties competed for honors. Total attendance including team members, alternates and club leaders was 663.

The winning team in the 1935 livestock contest was from the Magnolia Hustlers 4-H Club of Marshall-Putnam counties, with individual honors in livestock judging going to James Padgett, of Adams county.

High point team in dairy judging was from the Lake Zurich 4-H Club, of Lake county. Individual honors in dairy judging went to Delbert Gardner, of Warren county.

"Competition is expected to be unusually keen this year," said Pilchard, who will have charge of the contest. "A larger registration is anticipated, and teams have been training faithfully in an effort to wrest the first place trophies from the Magnolia Hustlers and the Lake Zurich Club."

First place award is an engraved shield to be retained for one year by the winning team, with medals going to team members. The number one livestock judging team has the privilege of representing Illinois in the non-collegiate contest held in connection with the International Livestock Exposition at Chicago. The team winning first in dairy judging may also represent the state in the national 4-H dairy judging contest at Dallas, Tex., in October.

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The first part of the document discusses the importance of maintaining accurate records of all transactions. It is essential for the company to have a clear and concise system in place to ensure that all data is properly recorded and stored. This will help in the future when it comes to analyzing the data and making informed decisions.

The second part of the document focuses on the need for regular communication and collaboration between all team members. It is important to have open lines of communication and to be able to share ideas and information freely. This will help to ensure that everyone is on the same page and that the team is working together effectively.

The third part of the document discusses the importance of having a clear and concise set of goals and objectives. It is essential for the company to have a clear vision of where it wants to go and what it wants to achieve. This will help to ensure that everyone is working towards the same goals and that the company is able to stay focused and motivated.

The fourth part of the document focuses on the need for regular evaluation and feedback. It is important to have a system in place to regularly evaluate the company's performance and to provide feedback to all team members. This will help to ensure that the company is able to identify areas for improvement and make necessary changes.

The fifth part of the document discusses the importance of having a clear and concise set of policies and procedures. It is essential for the company to have a clear set of rules and regulations that all team members must follow. This will help to ensure that everyone is working in a consistent and professional manner.

The sixth part of the document focuses on the need for regular training and development. It is important for the company to invest in its employees and to provide them with the necessary training and development to ensure that they are able to perform their jobs effectively.

The seventh part of the document discusses the importance of having a clear and concise set of financial records. It is essential for the company to have a clear and concise system in place to ensure that all financial data is properly recorded and stored. This will help in the future when it comes to analyzing the data and making informed decisions.

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### Clever Cooking Copes With Low Supply of Vegetables

A decreased supply of garden vegetables causes an increased problem for Illinois homemakers on how to cook vegetables to obtain the greatest food value, it is pointed out by Miss Glenna Henderson, extension specialist in foods, College of Agriculture, University of Illinois.

Wash new potatoes well, she says, but hesitate about scraping them, for the skins are not only good for roughage in the diet, but also many of the minerals and vitamins for health lie close to the surface. The same is true of young carrots, she says.

Because cabbage heads are due to be smaller as a result of the drouth, Miss Henderson advises even more care in their preparation. Both cabbage and greens belong in the class of vegetables which require little water for cooking. With tender cabbage and the greens, no water except what clings to the leaves after washing plus the water in the leaves themselves is necessary or desirable, because the object is to have no more liquid after cooking than will be served as juice with the vegetable. This juice should be served because in it are dissolved important food values which should not be lost. The cooking time should be too short to permit much "cooking down," she says. Stems of beets are a good substitute for greens at the present time.

Baking is the ideal way to retain more of the food value and flavor of the substantial vegetables like potatoes, squash, cucumbers, tomatoes and onions. Steaming ranks next in line and is a good way to prepare carrots, squash, beets, parsnips, sweet potatoes, wax beans, but is never used for green vegetables, Miss Henderson continues.

The difference, she points out, lies in the color factor. Green vegetables keep a bright color if cooked in an uncovered kettle for a short length of time.

The red color in beets and red cabbage, but not tomatoes, is the kind that turns blue in the presence of an alkali, such as soda or cooking water that is hard. The use of acid such as two to three teaspoons of vinegar to a pint of water will solve the situation for both cabbage and red onions. Leaving two or three inches of stem on beets and cooking them with the skins unbroken will prevent much loss of color.

White vegetables will remain white if cooked in soft or fairly soft water, but tend to turn yellow when cooked in hard water or for too long a time. Cream of tartar or vinegar added to the water in small amounts may preserve whiteness. As for carrots, sweet potatoes and other yellow foods, they keep their color no matter how they are cooked.

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### Home Accident Rate Ranks Next To That On Highways

Accidents can happen in the best of homes. Summer time, with its thousands of tourists on the highways and inevitable automobile accidents has nothing on the home where the stage is all set for some member of the family to be injured at any time, says Miss Gladys Ward, extension specialist in home management, College of Agriculture, University of Illinois.

More than 30 per cent of all the fatal accidents which occurred in 1935 took place at home, she says, and adds that there were also about 140,000 people permanently disabled and 4,460,000 temporarily hurt.

Topping the list of chief causes of fatalities are falls and burns, she finds, most of which were due to carelessness and could have been prevented.

The kitchen is believed to be the most hazardous room in the house. Explosions from fires lighted by kerosene by adults is given as one of the most frequent causes of death and injury. For young children playing with matches or being too near a hot stove or bonfire or boiling hot water has all too often been fatal, she adds.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
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Number 32

## Modern Methods Conserving Soil On Century-Old Farm

Making use of what are now termed modern soil conserving practices to maintain the original fertility of a 480-acre farm that has been in the family for nearly a century has long been the ambition of A. M. Stickle and son, Owen, of McDonough county, who are cooperating with the extension service of the College of Agriculture, University of Illinois and Farm Adviser R. C. Doneghue. Reports of their success to date have recently been gathered by R. C. Hay, extension specialist in agricultural engineering.

Passed down from father to son since it was settled 97 years ago, the farm has been the site of a complete soil conservation and improvement program. Limestone and phosphate have been applied to fields where needed, and alfalfa and red clover have been raised regularly in rotation with soil depleting crops.

Recognizing the fact that not all soil fertility is lost through the removal of crops from the land, the Stickles have constructed and maintained terraces to prevent soil erosion before the rich top soil has been washed away, Hay states.

The value of terracing to protect fields from losses of soil and soil fertility in conjunction with recommended soil treatment and cropping practices were first brought to Stickle's attention when heavy rains so seriously eroded a newly seeded alfalfa field that numerous small gullies were formed. With the assistance of the farm adviser and the extension agricultural engineer, terraces were laid out and built on the field. Since that time, Hay asserts, this field has eroded very little and the gullies have disappeared.

The Stickles have since purchased their own terracer and have terraced three additional fields, one through the cooperation of the erosion camp of the Soil Conservation Service at Macomb.

This year a terraced field has been planted to corn on the contour, with very little extra work entailed in farming the land.

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## Zinc Of Value As Peach Spray But Not As Fertilizer

While in some sections of the United States certain physiological diseases of peach trees have been corrected by applications of zinc sulphate, Illinois soils appear to have sufficient available zinc to permit proper development of both trees and fruit.

This finding is reported in a new bulletin, No. 424, just issued by the College of Agriculture, University of Illinois, covering a seven year study on zinc sulphate in peach sprays made by H. W. Anderson, chief in pomological pathology, and K. J. Kadow, associate pathologist, department of horticulture.

However, zinc sulphate does have a decided corrective effect on lead arsenate-lime spray injury to peach trees, the bulletin points out. Prior to 1929 when zinc sulphate was first added to spray ingredients, acid lead arsenate and hydrated lime with or without sulphur were the standard materials for peach sprays, although acid lead arsenate often caused severe injury to trees and fruit.

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Kendall and Shelby Take State Titles In 4-H Judging

With a record field of 172 teams competing, Kendall county took the state championship in dairy cattle judging while Shelby county won the honors in livestock at the annual 4-H judging contest held August 3 at the College of Agriculture, University of Illinois. E. I. Pilchard, boys' 4-H specialist, and his associates were in charge.

Kendall county not only outpointed a record field of entries in dairy judging but also did it with a team of two brothers and a sister coached by their father, a feat which set still another record for all the years of the competition. The winning combination included Virgil, J. George and Elaine Smith, children of Mr. and Mrs. George D. Smith, who operate a 160-acre farm with 35 purebred Holsteins near Aurora.

A score of 1,333 points out of a possible 1,800 in the judging of eight rings of Jerseys, Holsteins, Guernseys and Brown Swiss won the state title for Kendall county over 63 other teams representing 46 other counties.

Shelby county's state championship team in the livestock division was composed of Daniel Smith, Herbert Clawson and Arnold Uphoff and was coached by Raymond Biehler, assistant 4-H club leader. This team scored a total of 1,261 points out of a possible 1,800 in the judging of beef cattle, sheep, hogs and horses to outpoint the 107 other livestock teams representing 63 other counties.

The winning livestock team will represent Illinois in a national contest at the Chicago International Live Stock Exposition in Chicago in December, while the winning dairy team earned the right to go to a national contest at the National Dairy Show, Dallas, Tex., in October.

The 516 members comprising the 172 competing teams were the most skilled livestock and dairy judges among the 25,000 Illinois farm boys and girls enrolled in definite projects on better farming and homemaking practices under supervision of their county farm and home advisers and the extension service of the agricultural college.

Highest scoring individual in the dairy contest was Loren Turner, a member of the Coles county team from Mattoon, who made 497 points out of a possible 600. This team was coached by H. C. Rathe, a senior in the agricultural college.

Garland Jennings, a member of the Gallatin county team from Equality, took high individual honors in fat stock judging when he scored 512 points out of a possible 600. This team was coached by Farm Adviser Ray H. Roll.

Finishing behind Kendall county's winning entry, the Future Stockmen 4-H, in the dairy division were Betsy Calf Club, Jo Daviess, 1,317; Bismarck 4-H, Vermilion, 1,312; Lucky 13, Fulton, 1,312; Mattoon Jolly 4-H, Coles, 1,304; Laona Calf Club, Winnebago, 1,299; Silverleaf 4-H, McLean, 1,293; Waterman 4-H, DeKalb, 1,265; Mahomet 4-H, Champaign, 1,247; Milo Pioneers, Bureau, 1,236; Marengo Kishwaukee, McHenry, 1,225; Reno 4-H, Bond, 1,212; Dietrich Calf Club, Effingham, 1,201; Fox Valley 4-H, Richland, 1,199, and Wesley Hustlers, Will, 1,183.

Shelby county's entry, the Junior Feeders, state champions in the livestock division, were followed by Ellington Sow and Litter, Adams, 1,245; Ferren, Clinton, 1,239; Equality, Gallatin, 1,224; Reddick Blue Ribbon, Kankakee, 1,190; Wall Town, Ford, 1,178; Prairie Ramblers, Piatt, 1,174; Golden Horse Shoe, Coles, 1,172; Lake Zurich, Lake, 1,161; Kinman, Morgan, 1,157; Mount Vernon, Bond, 1,147; Hensley Lucky 4-H, Champaign, 1,142; Whirlwind 4-H, DeWitt, 1,134; Crusaders 4-H, Stephenson, 1,118, and Maroa Livestock, Macon, 1,104.



### State Fair Chorus To Feature 2,000 Rural Musicians

A musical production featuring a cast of 2,000 rural voices, dramatists and musicians, appearing in full costume in the cantata, "The Harvest," will be a feature of the Illinois State Fair, D. E. Lindstrom, rural sociologist, College of Agriculture, University of Illinois, reports.

Musicians and singers from 20 Illinois counties will participate in this, the third annual recital of the Illinois State Fair Chorus. The production will be staged on a platform in front of the fair grandstand at 7 P.M., Friday, August 21.

Counties participating in the chorus are Mason, Sangamon, Macoupin, Champaign, Livingston, Peoria, Knox, Shelby, Marshall-Putnam, Pike, Kendall, Effingham, Mercer, Edwards, Boone, Kane, Lake, Pope-Hardin, Stephenson and Jo Daviess.

The production will not be unrehearsed, Lindstrom, who is superintendent of the event, points out. During the summer months each county is staging the production as a local entertainment feature. At the fair these county units will be merged into one mammoth presentation with Lanson F. Demming, of the University of Illinois School of Music, conducting.

"The state fair presentation will bring together the largest group of rural Illinois singers, folk dancers, dramatists and musicians ever assembled," Lindstrom stated. "It marks a distinct forward step in the development of a non-competitive, genuinely cultural project for rural people interested in music."

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### Skillful Dairying Eases Danger Of Shortage In Milk

With prices for whole milk already on the increase in several sections of Illinois because of the drouth, intelligent, skillful feeding and sound management of dairy herds will go a long way toward preventing a milk shortage, says J. G. Cash, dairy extension specialist, College of Agriculture, University of Illinois.

"Cows that have access to darkened, clean, cool barns or sheds during the heat of the day are more comfortable and less likely to fall off in production as a result of the hot weather," he explained. "Since large amounts of water are required each day by high producing cows, they should have plenty of fresh, clean water at all times.

"Giving cows plenty of the right kind of feed at all times is the safest precaution against costly drops in milk yields. Whenever pasture alone fails to keep the cows in good condition and maintain milk flow, additional feed will pay dividends. The amount of grain necessary for cows on pasture varies with the kind of pasture and the rate of production.

"The practice of feeding first cutting alfalfa in a rack to cows on failing pasture has proved satisfactory and economical. If this practice is followed, a smaller amount of grain will be required. In some cases satisfactory results have been obtained by feeding alfalfa and no grain. Silage is also an excellent supplement to failing pastures.

"While a 12 per cent total protein grain mixture is sufficient when cows are on good pasture, a 15 per cent mixture will usually be required for late summer conditions."

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Seventy free scholarships will enable that many Illinois 4-H club members and leaders who have demonstrated their active interest in the conservation of wild animal life to learn more about a well rounded program in conservation at the second annual 4-H conservation camp at Lake Bloomington, August 31 to September 4.

The camp is sponsored by the extension service of the College of Agriculture, University of Illinois. The free scholarships are made available by a Minneapolis, Minn., cartridge concern.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

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## UNIVERSITY OF ILLINOIS

### New Buildings In Danger If Termites Are Not Stopped

Necessity for home owners and builders to get the upper hand over the wood-destroying termite, or white ant, which annually costs Illinois around five million dollars, is becoming more urgent as building is resumed, warns W. P. Flint, chief entomologist of the Illinois State Natural History Survey and of the College of Agriculture, University of Illinois.

Believing that an ounce of prevention is worth a pound of cure, Flint comes to the forefront with the suggestion that new homes are no safer from termites than old ones unless precautions are taken at the time of building to offer neither passage-way nor food to the ant with the destroying appetite.

Examples of the unsuspected havoc wrought upon many well-built homes, running into hundreds of dollars, may be seen in Champaign-Urbana, as well as in other cities of central Illinois, Flint points out. Not more than 10 per cent of the buildings now constructed are built in a way to make them termite resistant.

Control of the termites, he points out, may be based upon the fact that the subterranean termite must have contact with the soil or an abundant supply of moisture throughout its life, either directly through wood resting on the soil or through a covered passageway which it may construct through cracks in foundations or directly over the foundation structures. Permanent parts of the buildings which are beneath or near the soil are chiefly endangered.

Suggestions offered by Flint are based on results of a study of the habits of the insects under Illinois conditions.

All wood, including tree stumps, large roots, and old posts must be removed before building, he announces. All forms and other waste wood should be removed before grading in around foundation. No untreated wood should be closer to the soil than 18 inches unless it is protected by termite guards, and steps and other supports should rest on solid concrete or stone, Flint says. He advises swinging lattices from the top to allow frequent inspections on both sides, and would have lattices clear the soil by three inches.

Danger of termite infestations can be eliminated, he says, by using good cement for foundations or in between stone or brick. Hollow tiles should be capped with at least four inches of concrete or cement mortar.

Foundations should be built so that to reach the wood, the termite must build galleries in open, visible places, such as over walls or pipes.

Cellar hatchways, built as a part of the foundation will eliminate cracks. Doors and casing at least six inches above the soil line is desirable. Cellar windows are best made with steel or treated wood frames.

Pipes passing through basement floors must be set tightly into concrete and located to allow frequent inspection. Basement floors should be reinforced to prevent cracks either due to settling or where the floor joins the outside wall.

Avoiding the use of wood wherever possible in basements; providing ventilation and natural light in all storage space in the basement and beneath unexcavated portions of the building; and inspection of all parts of both sides of the foundation walls at least twice annually with a good flashlight will help guard against the termite, Flint says.

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Early Wet Fall Would Cut Grasshopper Numbers In 1937

Not for about three months yet can definite predictions be made as to whether the Illinois grasshopper population for next year will be worse than the hordes now consuming Illinois crops.

W. P. Flint, chief entomologist, Illinois Natural History Survey and College of Agriculture, University of Illinois, has given this answer to the hundreds of farmers who are asking about chances of escaping the scourge next year.

"While conditions may change before late October or early November, present indications are that grasshopper numbers will be greater next year than this," Flint said. "Many hoppers are now reaching their full-grown winged form and are starting to mate. Egg laying will not be general before September. An early, wet fall will prevent their laying the full quota of eggs, while an open fall with late frost and many warm, sunny days in late September will be ideal for the laying of large numbers of eggs."

"The Natural History Survey and agricultural college warned Illinois farmers last winter of the present infestation. Definite predictions will be made again this winter in time for control measures to be started."

Poisoning insects now and discing up areas where eggs have been laid, thereby exposing them to the weather, were listed by Flint as methods for reducing numbers next year. However, he advised that the discing must not be done before the middle of November.

The present heavy infestation of grasshoppers is caused in part by a decrease in the number of insects, such as blister beetles and bumble bee flies, which feed on grasshoppers and grasshopper eggs, he stated. As numbers of these latter insects increase, the grasshopper population will decrease. It is likely that hoppers will be present in destructive numbers for the next two or three years, by which time he expects their insect enemies to become numerous enough to keep them down.

In many Illinois alfalfa and clover fields, a hoppercatcher or dozer can be used effectively, he pointed out. The hoppers are caught alive and may be sacked and dried for chicken or hog feed. Since they are about 75 per cent protein and high in fat and phosphorus, their value as chicken feed may amount to more than the expense of catching them.

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Trench Silos To Aid Farmers In Salvaging Corn Crop

With the cost of a temporary trench silo limited to the cost of the labor, Illinois farmers generally will be turning to this method of salvaging corn from drouth and grasshoppers and providing extra livestock feed next winter, E. W. Lehmann, head of the department of agricultural engineering, College of Agriculture, University of Illinois, believes.

"Trench silos can be built easily and quickly with materials and equipment found on the farm," Lehmann said. "They are fire and wind proof, and less freezing results than with an upright silo. As the silage does not have to be blown so high, less power is required to operate the silage cutter. A tractor, horse or truck may be used to pack the silage."

Trench silos are usually dug six to eight feet deep and the silage fed from one end. Less spoilage results when they are placed at one or both ends. As there is usually some spoilage in the top layer, it is recommended that the ears of corn be removed from the stalks which make up the top six inches of the silage.

After the trench is filled up to two or three feet above the ground level, it is necessary that it be covered well. While there are several methods of covering, the one most often used is four to six inches of dirt with the dirt extending about two feet past the edges of the silo.

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### Save Summer Cabbage By Making It Into Sauerkraut

Homemakers who are especially anxious to save every bit of garden produce possible this year may prevent the spoiling of summer cabbage, which does not keep like its winter cousin, by turning it into sauerkraut, says Miss Grace Armstrong, extension specialist in foods, College of Agriculture, University of Illinois.

Cabbage, she points out, not only is ideal for pepping up appetites, but it also combines well with many other low priced foods such as navy beans or meat and dumplings for inexpensive meals. Moreover, once the sauerkraut is made and kept in a cool place, it may last for several weeks. The large amounts of salt prevent the growth of yeasts and bacteria.

Sauerkraut is made by the dry salt method in which the vegetable is cut up in small pieces so that the juices are readily extracted by the salt added, thus forming a brine.

Following the method advocated by Miss Armstrong, the cabbage is cut finely and weighed, allowing four ounces of salt to ten pounds of cabbage. The ingredients are alternated as they are put into a sterile crock or a clean wooden barrel and packed tightly with a wooden stamper. A cheese cloth is spread over the top, followed by a clean wooden cover or large plate which is weighted down. Throughout the two weeks fermenting period, the brine must cover the food, cautions Miss Armstrong.

The product is kept at about 85 degrees Fahrenheit, and whenever a scum forms on the top it is removed. Properly cured, sauerkraut is a light, yellow color, and very crisp in texture.

Once fermentation has ceased and the product cannot be kept in a cool place, care must be taken to prevent spoilage, continues Miss Armstrong. She advocates canning the product in glass or tin jars by heating the kraut to boiling point in its own brine. The jars or cans are filled, the cans sealed, the glass jars partially sealed and the containers then processed for 15 minutes in a water bath, counting from the time the water starts to boil. Sealing of the glass jars is completed immediately.

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### State Rural Electrification Committee Adds To Staff

Farm and home advisers and members of their local rural electrification committees now have the benefit of an enlarged staff at the headquarters of the state rural electrification committee, Springfield, to assist them with development of extension service projects in this field. Also available for their use is an official bulletin published monthly by the committee.

Most recent of the additions to the state committee staff are Harry Faris, Urbana, who will do legal research work for the committee and who will be available to give advice on legal matters to individuals or groups of farmers who may need it; John Marquardt, Champaign, electrical engineer who will act as rural service engineer; W. M. Strickler, Chicago, who is doing legislative research, and H. Huebinger, map draftsman of Peoria, who will take charge of the mapping of rural and other electric lines in the state as part of the survey which the committee is now making.

Prof. E. W. Lehmann, head of the department of agricultural engineering, is the representative of the College of Agriculture, University of Illinois on the committee. Other members are Walter W. McLaughlin, chairman, director of the Illinois State Department of Agriculture; C. V. Gregory, editor, Prairie Farmer; Harry A. Barr, commissioner, Illinois Commerce Commission, and Paul J. Raver, professor of public utilities, Northwestern University.

One means which the committee is taking to further rural electrification is an educational exhibit which will be made in the grand stand building during the State Fair.

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Number 34

## Illinois Ranks Ninth In Farms With Electric Service

Ranking eleventh among the states of the nation in number of farms, Illinois stands ninth in the number of farms served by central station electricity, according to R. R. Parks, extension specialist in rural electrification, College of Agriculture, University of Illinois.

"Illinois stands 23rd among the states in the percentage of farms served by central station electricity," Parks continued. "Of the 231,312 farms in the state, 28,485 or 12.7 per cent, were enjoying the advantages of electricity at the end of 1935.

"This low percentage of electrified farms means fewer water systems and less electrical equipment of all kinds which could lighten the drudgery of farm work both in and outside the farm home. While 79.5 per cent of Illinois farmers owned automobiles, according to figures obtained in 1930, only 19.8 per cent had running water in their homes and only 40.8 per cent had radios."

In a number of cases local power companies are building power lines to serve additional farms, while in others loans from the Rural Electrification Administration are making construction of power lines possible.

The Rural Electrification Act provides that \$50,000,000 shall be available this year as loans for the construction of rural lines and house wiring. One half of this amount is to be allocated to the various states in proportion to the percentage of unelectrified farms. The other half may be allotted at the discretion of the administrator of the act in states where it will prove the most effective, provided that not more than 10 per cent, or \$2,500,000, may go to any one state.

This means that between \$800,000 and \$3,300,000 will be available in loans to Illinois farmers for the extension of rural electrification, Parks said.

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## Nevens Advises Delay In Cutting Green Corn For Silage

Unless corn is drying up or is being ruined by grasshoppers, rains within the next few weeks may cause it to develop and provide additional feed value, especially as ensilage, according to W. B. Nevens, professor of dairy cattle feeding, College of Agriculture, University of Illinois.

"If there is still some chance that the corn will make further growth, it should be allowed to stand longer before cutting it for ensilage," he said. "This will permit those Illinois farmers who are planning to dig or build temporary silos to complete all preparations before the corn is cut.

"In cutting corn now that may make further development, farmers are sacrificing considerable of the nutritive value of the feed. Normally corn may double its dry matter content and nutritive value between August 15 and September 15."

A simple method of determining the dry matter content of corn is explained in circular No. 409, "Corn as a Silage Crop."

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### Sense Of Color Is Important In Picking Ripe Tomatoes

Home and commercial vegetable gardeners in Illinois whose prospects of a bumper tomato crop were cut short by the dry hot weather may yet be able to harvest at least a half crop, Lee A. Somers, extension specialist in vegetable gardening, College of Agriculture, University of Illinois, believes.

"Extremely high temperatures of July killed the tomato pollen," Somers said. "With the return of cooler weather flowers have stopped drooping and the plants have started setting fruit. Since the plants this year are in many cases unusually healthy, much depends upon the lateness of the first killing frost.

"In years such as this proper methods of picking are especially important. Even a good yielding crop of canning tomatoes may still prove unprofitable if it is poorly or carelessly picked. Proper picking increases the total tonnage, increases the percentage of No. 1 fruits and decreases the total harvesting costs.

"Anyone who is color blind is out of place picking tomatoes," Somers asserted. "As tomatoes ripen they go through a series of color changes beginning with greens, then through yellows and ending with the full deep reds denoting maturity. Along with the color transitions are chemical changes which give the fruits their full and delicious flavor never found in immature tomatoes."

Since even a perfectly formed tomato is rated No. 2 if it is not ripe, it is important that only ripe fruits, reaching full weight with full maturity, be picked, Somers explained. A fully ripened tomato will remain in that condition on the vine for from four days to a week, depending on weather conditions. More frequent picking is costly and unnecessary.

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### Color And Care Stressed In Hints On Buying Hosiery

With fall and winter styles calling for shorter skirts, hosiery will soon become a very important item in the homemakers clothing budget.

This is the comment of Miss Edna Gray, home economics extension specialist in clothing, College of Agriculture, University of Illinois, who outlines several points which she believes will help to produce the well dressed look this coming season without undue strain on the purse.

Colors for fall will be somewhat lighter than those worn last winter, she says. There will be several browns, any one of which may be worn with costumes of similar tones. Stylists are suggesting a cinnamon brown and a golden tan for wear with yellowish greens and black; a light brown for use with wine, raisin, rust, dark green and black.

Equally good for wear with these latter colors is a group of light and medium dark beiges and taupes. For those who have liked the sun and copper tones of this past summer, burnt ochre and burnt copper are continued for use with browns, greens, blues, and black.

However, color is not the only element in the selection of hosiery, she continues. The weight selected, a two or three thread chiffon for dress wear, a three to five thread service chiffon or even service weight hose for everyday wear is important as well as length of both foot and leg.

When buying stockings, it is often helpful to stretch the hose at the instep and at the top. From the heel across the instep, the stretch should be six and one-half or seven inches; while at the hem edge the stocking should stretch to eleven and one-half or twelve inches.

She also stresses the fact that hose several sizes larger than the shoes should be purchased. Many people always buy stockings three sizes larger than the shoes they wear.

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Parents' Social Activity Affects 4-H Club Membership

Extent to which Illinois farm boys and girls participate in 4-H club activities is determined largely by the extent to which their parents participate in and approve of organization and social activities.

This fact is revealed in a study made by D. E. Lindstrom, rural sociologist, and W. M. Dawson, of the animal husbandry department, College of Agriculture, University of Illinois, and reported in a new circular, "Selectivity of 4-H Club Work," published by the college.

The study covering 1,401 of the 25,000 members of 4-H clubs of the state and 862 non-members, was carried on in 60 communities in six counties.

"Boys and girls whose parents participated actively in various organizations and social activities were attracted in relatively greater numbers to the 4-H clubs than were younger people whose parents did not participate in such organizations and activities," the circular states.

"Furthermore, boys and girls whose parents approved certain more desirable activities tended to be drawn into 4-H club work in relatively greater numbers than boys and girls whose parents were less discriminating in their choice of social activities.

"There was some evidence, also, that the clubs failed to hold young people whose parents approved of undesirable activities and held those whose parents were more discriminating in their approval.

"Boys, especially, and to a lesser degree girls who participated to the greatest degree in other organizations were attracted in relatively greater numbers to 4-H clubs."

Activities of 4-H clubs through the state are carried on under the supervision of local farm and home advisers and the extension service of the College of Agriculture.

-M-

International Horticultural Exhibit, September 12-20

Illinois growers of flowers, fruits and vegetables are grooming their plants and looking forward to September 12 to 20 when they will have the opportunity to show their products in the first continent-wide exhibition devoted exclusively to horticulture, according to J. C. Blair, head of the department of horticulture, College of Agriculture, University of Illinois.

The occasion is the International Horticultural Exposition to be staged in the new International Amphitheater at the Chicago Stock Yards under supervision of an advisory committee of prominent horticulturalists, of which Blair is chairman.

Facilities for the show will be provided by the Union Stock Yards and Transit Company. The exposition represents an effort to give the same recognition to horticulture that for many years has been given to agriculture in the International Live Stock Exposition, Blair explained.

"Since the exposition will be just before frost when gardens are in full bloom, it should have the widest possible popular appeal," Blair said. "There will be a place in the exposition for everyone interested in any phase of horticulture including amateur and professional growers of flowers, fruits and vegetables, nurserymen, garden clubs, associations, institutions and educational agencies.

Premium lists containing full details of the competitive classes are now ready for distribution to those addressing requests to the exposition headquarters at the Chicago Stock Yards.

More than \$16,000 in cash prizes together with numerous trophies will be awarded to winning exhibitors. There will be no entry fee and entries may be reclaimed by their owners if they wish, Blair stated.

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COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

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## Illinois Farmer Reports Success With His Trench Silo

After three years' experience with a trench silo, Hosea Crain, Carterville township, Williamson county, farmer, is not worrying about how he will save drouth stricken corn for winter feed, it is revealed in a report to the College of Agriculture, University of Illinois, from Dee Small, Williamson county farm adviser.

Three years ago Crain constructed a trench silo from plans prepared by the agricultural college. Last year when an ensilage cutter was not readily available, Crain carefully stacked the whole stalks of corn in the silo, then thoroughly packed and covered them. He reported the silage to be of excellent quality and relished by his horses, cattle and even chickens. One difference noted by Crain was that the uncut stalks were harder to remove for feeding.

In discussing the practice of using uncut corn for silage H. P. Rusk, head of the animal husbandry department, College of Agriculture, University of Illinois, pointed out that in the past silage has been stored in bundles in the northern part of the corn belt with fair success.

"In that section the stalk is much smaller and shorter and the leaves are closer to the ground, giving a better pack with less danger of spoilage," Rusk explained.

"Bundle silage must be well packed," he warned, "preferably by driving a tractor with lugs over the corn in the trench. Rather than lose the feeding value of drouth corn that has no chance of making grain, it might be advisable to try bundle silage, but only if it is impractical to obtain the use of a silage cutter.

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## Horses Grazing Stalk Fields May Face Disease Danger

If the present drouth period is followed by heavy fall rains the season will be typical of 1934 when Illinois farmers lost 5,000 horses valued at half a million dollars as a result of so-called corn stalk disease, warns Dr. Robert Graham, chief in animal pathology and hygiene, College of Agriculture, University of Illinois.

"Although studies have been made since the outbreak two years ago, the specific cause of the disease remains a mystery," Dr. Graham asserts. "However, it has been quite definitely established by farm practice that if horses are not placed in stalk fields or fed damaged, worm eaten corn, the disease seldom develops.

"If the horses become sluggish, show symptoms of excitement or the blind staggers, a veterinarian should be called at once," Dr. Graham advises. "Prompt treatment of the disease in its early stages has given good results, but no curative or preventive measures have been found."

If it is necessary to feed damaged corn, Dr. Graham advises that it be carefully selected. If shelled corn is placed in water before feeding, damaged kernels which usually float to the surface may be skimmed off and fed to hogs.

There is no definite way to tell when a stalk field is dangerous, Dr. Graham pointed out.

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Illinois Farmers' Cash Farm Outgo Is Up 38 Per Cent

Illinois farmers last year increased their cash farm expenditures by 38 per cent over the previous year, while their income increased only 18 per cent, it is revealed by records kept by 1,600 farmers for the two-year period.

Average cash farm expenditures were \$740 greater last year than the year before, while cash income was only \$665 more.

"A good income is necessary if farmers are to be good purchasers," remarks H. C. M. Case, head of the department of agricultural economics, College of Agriculture, University of Illinois, in commenting on these facts unearthed in farm management studies carried on by the college.

"As farm income increases and is fairly well maintained beyond a certain minimum level, the farm market for machinery, buildings and other goods and services increases out of all proportion to the actual percentage increase in income," he continued.

"A certain level of farm income is necessary to meet taxes, interest on debts, necessary family living expenses and other quite fixed items of outgo. Also certain minimum operating expenses are necessary on the farm. However, after the farm income reaches a certain point, the farmer's purchases of goods and services increase almost directly as his income increases.

"Under conditions as they were in 1934, practically half the income was used for these fixed expenses. In 1935, with an increase in income, farm business expenditures rose a like amount, the large increases coming in the purchase of machinery, improvements and livestock.

"In considering the amount of fixed expenses which are not paid out for new equipment, goods and services, it becomes clear that if industry is to find a good farm market, it is necessary that the farmer have a level of income that exceeds this lower minimum."

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Says Food Can Be Used To Destroy Ants It Attracts

Food which proves the drawing card for ants may also be the method for destroying the household pests, suggests W. P. Flint, chief entomologist, State Natural History Survey and College of Agriculture, University of Illinois.

Knowledge of the food habits of six species of ants common to Illinois homes and grounds are outlined by Flint and W. E. McCauley, in a recently issued bulletin entitled, "Ants, and How to Combat Them."

Pharaoh's ant, or the small reddish ant, proves the most annoying and the most difficult to eradicate, in Flint's opinion. Once given a foothold in the house, the ant may even remain throughout the winter months. Successful methods of combating it may be in the use of a sweet tasting bait containing thallium sulfate poisoning, or in the persistent trapping of the ant by means of sponges laden with food. Utmost care is exercised to keep the sulfate poison away from children and pets, Flint cautions. The use of food laden sponges is effective for only five to eight hours when the sponges should be collected and the ants destroyed. Otherwise the sponges may act as a food supply to aid in building up the ant colony.

Control of the small, yellowish thief ant is carried out by thoroughly dusting the run-ways of the ant with sodium fluoride, or by mixing poison tartar emetic with lard or bacon grease and placing the bait close to the ant colony.

Methods for contending with the large black carpenter ant which may eat tunnels into trees or into the dead wood portions of timbers in the house are either to use the poison sirup recommended for Pharaoh's ant, or to mix a poison of brown sugar and paris green, Flint reports. The bulletin also deals with the late winter, large yellow ant; the cornfield and the odorous ants; and the winged or flying ants.

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Many Crystals Can Be Avoided In Making Grape Jelly

What makes grape jelly crystallize? Anticipating that many Illinois home-makers will put up more grape jelly than ever before to replace the lowered supply from early season fruits, home economists and chemists at the College of Agriculture, University of Illinois, explain the peculiar malady which often occurs in grape jelly.

Technically they say it is the tartaric acid in the juice precipitating. To homemakers it means crystallization has taken place, and all of those small candy-looking squares, dispersed throughout the jell are really cream-of-tartar crystals. While not harmful, the crystals prove annoying and lower the standard for good jelly.

It seems there are several remedies for this situation but not one that is guaranteed to take out every last crystal. However, Miss Glenna Henderson, home economics extension specialist in foods, assures us that there are some fairly certain methods to meet the situation.

The first method is to allow the juice to stand overnight, then siphon off or strain the juice. Since the method may not remove all the crystals, Miss Henderson says an alternative is to can the juice and allow it to stand for some time before making it into jelly. This will give the crystals time enough to settle to the bottom.

A third method, Miss Henderson offers, is to combine grape juice with some other fruit juice and thus dilute the juice so the tartaric acid is not so concentrated.

At any time, it is best to make small glasses of jell which can be eaten at one meal, she says.

Among the recipes which she recommends is one for quickly made grape jelly calling for three pounds of fully ripe Concord grapes and three pounds of sugar. Mash the sugar and grapes together. Boil them hard for 15 minutes counting from the time the mixture starts to boil. Press the mixture through a medium fine colander. Pour the jell at once into sterile jelly glasses, and cover with paraffin.

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Winged ants are not a particular kind or species, but the young kings and queens or male and female ants that develop in ant nests each year, according to "Ants, How to Combat Them," a new circular issued by the College of Agriculture, University of Illinois, in cooperation with the State Natural History Survey. The winged ants start the new colonies which will be composed mainly of the wingless workers.

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For finishing baby beeves oats may replace from one-fourth to one-third of the corn in the ration without materially reducing the rate of gain, according to the animal husbandry department, College of Agriculture, University of Illinois.

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When Sudan grass, cane, or any kind of grain sorghum is stunted or blighted by drouth, or is trampled, frosted or wilted, the plants may contain enough prussic acid to kill livestock.

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The first county agent, or farm adviser, in the United States was W. C. Stallings, of Smith county, Texas, appointed November 12, 1906.

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Volume XIX

September 2, 1936

Number 36

## Wheat Supplies Are More Than Sufficient For Next Year

Illinois consumers of bread and other wheat products are in no danger of an immediate wheat shortage, since wheat supplies are more than sufficient to provide the domestic requirements for the 1936-37 season, according to J. J. Pieper, professor of crop production, College of Agriculture, University of Illinois.

Wheat production this year in this country, as of August 1, was estimated by the bureau of agricultural economics, U. S. Department of Agriculture, at 632,745,000 bushels. The carryover from last year as of July 1 was about 150,000,000 bushels, indicating total supplies for the current crop year of 783,000,000 bushels, Pieper pointed out.

"On the basis of estimates and after allowing for probable imports and exports and a domestic consumption of 660,000,000 bushels, there should be a carryover of about 150,000,000 bushels next July," he said.

Last year domestic consumption of wheat amounted to 655,000,000 bushels and in 1934 to 661,000,000, while the five-year average is 620,000,000 bushels.

Acreages seeded for the 1936 wheat crop, 74,000,000 acres, were the second largest in history, and seedings as large for the 1937 crop would produce fully enough wheat for total domestic utilization even if yields should turn out to be one-fourth below average, according to the annual mid-summer wheat outlook issued by the federal department of agriculture.

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## American Soybean Association Meets Sept. 14, 15, 16

After having concerned itself with soybean varieties, methods of culture, harvesting and feeding, the American Soybean Association will devote particular attention to commercial utilization of the crop at its sixteenth annual session, September 14, 15, and 16 at Ames, Cedar Rapids and Hudson, Iowa.

In pointing out this fact, J. C. Hackleman, crops extension specialist, College of Agriculture, University of Illinois, and vice-president of the association, stated that Illinois would be well represented on the program of the organization whose membership consists of soybean growers, processors, dealers, manufacturers of food products and extension workers of the federal department of agriculture and of the agricultural colleges of the principal soybean producing states.

O. E. May, Urbana, will discuss the research program of the new regional soybean industrial products laboratory, of which he is director and which is located at the University of Illinois College of Agriculture. W. L. Burlison, head of the agronomy department of the agricultural college, will report on experiments with soy-oil paint conducted by the college. On the banquet program Thursday evening, Miss Sybil Woodruff, of the home economics department of the college, will present a discussion on "Soybeans for the Homemaker."

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500 Rural Youth Leaders To Meet At Urbana, Sept. 26

Fifty-nine counties are slated to send delegates to the third state-wide rural youth conference at the College of Agriculture, University of Illinois, September 26.

Signifying their desire to put in a full day of discussion on problems encountered in their work in the past year and to make mutual plans for fall programs, more than 500 young people are expected to get together at the University, according to R. R. Hudelson, assistant dean, College of Agriculture, chairman of the conference.

Plans for the day include a welcome from Dean H. W. Mumford, of the agricultural college, and a ten o'clock talk on "New Concepts of Rural Citizenship" by John R. Barton, faculty member of the University of Wisconsin, who has made an intensive study of the celebrated folk schools of Denmark.

Five-minute reports on young people's activities have been planned with a representative from DeKalb county speaking on county surveys as a basis for program planning; a Mason county delegate talking on current problems of young people; DeWitt county delegate, drama production; LaSalle county delegate, building a program around a definite interest; and Marshall-Putnam county, a well-rounded program.

Following a box luncheon in the stock pavilion at noon, the delegates will be divided into 25 discussion groups, according to Miss Cleo Fitzsimmons, extension specialist in junior club work of the college, who is assisting with program plans. On the basis of subject matter offered in the morning talk by Barton, the topic "What activities can rural young people engage in to advance the cause of good citizenship" will be discussed.

Other features on the program will be a talk on the folk music of southern Illinois by D. S. McIntosh, of the Southern Illinois State Teachers College, Carbondale; a discussion on the need for uniformity in name; plan of procedure and activities of young people's groups; entertainment by young people's organizations; and an evening recreation program directed by E. E. Regnier, rural sociologist of the college.

Taking part in a panel discussion on "Looking Ahead with Illinois Young People" will be Mary Janet Irwin, Petersburg, Menard county; John Weiss, Dixon, Lee county; Mildred Parker, Clinton, DeWitt county; Father George Nell, Island Grove, Jasper county; and Miss Cleo Fitzsimmons.

Persons who will assist with the day's activities are, of the young people's group, Elizabeth Butts, Princeton; William Ellenson, Morton; Mary Erkovich, Hillsboro; Walter Kaston, Carlinville; Mildred Parker, Clinton; Eugene Stadel, Henry; and Earl Stumph, Columbia.

Among the University students who will help are Rose Brewer, Greenville; Melvin P. Behlback, Lincoln; Nancy Grosboll, Petersburg; Lucile Hieser, Minier; James McCabe, Jr., Pontiac; Ralph McKenzie, Malta; and Robert Shafer, Claremont.

State advisory members who have been consulted on the program are Dwight L. Bailey, Western Illinois State Teachers College, Macomb; Eugene Curtis, director of Illinois Agricultural Association, Champaign; Miss Jessie Campbell, home adviser, Livingston county; Wesley C. Eastman, Eastern Illinois State Teachers College, Charleston; L. A. Hodam, Bement; C. A. Hughes, Waterloo, Monroe County Farm Adviser; Mrs. Elsie Mies, organization chairman, Illinois Home Bureau Federation, Urbana; and Charles E. Shike, of the Illinois Church Council, Springfield.

University staff members cooperating are Mrs. Kathryn Van Aken Burns, state leader, home economics extension; D. E. Lindstrom, rural sociologist; A. W. Nolan, agricultural education; G. S. Randall, extension specialist, junior club work; and J. C. Spitler, state leader of farm advisers.



Fall Home Bureau Plans To Reach 12,000 In Illinois

Finishing touches are being put upon fall programs for more than 12,450 home bureau members in Illinois, with better homemaking and money management proving big items of interest in the 44 organized home bureau counties, reports Mrs. Kathryn Van Aken Burns, state leader, home economics extension, College of Agriculture, University of Illinois.

With the organization of Christian, Henry, Whiteside, Montgomery, Ford and Shelby counties in 1936, the services of a home adviser and a comprehensive home economics program in cooperation with the home economics extension staff of the University will be extended to 2,000 additional homemakers, she announces.

The major trend along food and nutrition lines, as revealed by program requests of the women, is for more knowledge about food and its relation to health. Easily prepared meals, the study of meats as to selection and cookery, the study of bread and its variations, of the home-grown foods, milk, eggs, and meat, and of easy ways to entertain at teas, parties and dinners, are of patent interest this year in contrast to the desire for consumer information and canning knowledge which was stressed last year. Heading up the work are Miss Grace Armstrong and Miss Glenna Henderson, home economics extension specialists in foods.

Interest in kitchen clinics rates high this year in comparison to the outstanding interest in laundering work of last year, reports Miss Gladys Ward, home management specialist. Programs reveal that more than 13 counties have asked for special lessons on convenient kitchens, and hope to follow up with kitchen clinics. A part of the home management work, the project is far advanced in Illinois.

Steady interest in clothing and textiles is upheld this year with choices leaning toward consumer information on the buying of ready-to-wear clothing, announces Miss Edna Gray, home economics extension specialist in clothing. Requests varying from clothing construction to fashion hints and laundering knowledge, she explains, prove the interest homemakers are taking in obtaining good looking garments.

Significant of the new interest developing in the child care and parent education project are early requests from more than 15 counties for special meetings. These will be conducted by Miss Edna Walls, extension specialist, and deal with such problems as family cooperation, personality of individuals and some of the assets of the successful family.

Fall programs are featuring home account work to even a greater degree this year as cash incomes for farm families increase, according to Mrs. Ruth Freeman, home accounts specialist. Coming in to her are requests for special meetings in the majority of the organized counties.

Health work undertaken in 28 counties will include talks by Miss Fannie Brooks, health specialist, on health laws, keeping physically fit, hints on taking care of the sick and immunization.

Other projects which Mrs. Burns lists as minor subjects to be stressed during the coming year are "Know Illinois" project, landscaping, better English, book reviews, better business procedures and understanding of Illinois laws as they affect the home.

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Flushing ewes at breeding time by turning them out on good, lush pasture is the cheapest and most practical way to get more twin lambs. If pasture is scarce, some grain may be used as a supplement.

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## Increased Illinois Wheat Acreage Anticipated for 1937

Many Illinois farmers with feed supplies cut short by the drouth are planning to seed wheat this season since it is one of the first crops that can be harvested next year, according to George H. Dungan, professor of crop production, College of Agriculture, University of Illinois.

"Other reasons for the increased interest in seeding wheat are the favorable wheat prices of the past few years and the good yield and excellent quality of the crop harvested this year," he explained. "The 1936 wheat crop in Illinois was estimated on August 1 at 35,751,000 bushels as compared to 30,060,000 bushels in 1935.

"Reflecting this interest in wheat seeding is the search Illinois farmers are making for sources of the best seed wheat available. They are attempting to start with the purest seed possible, especially in the southern portion of the state where soft wheat is grown and where the commercial outlets for the crop are threatened by large amounts of cockle, cheat, garlic and onions found in much of the wheat in that area.

In southern Illinois, the red winter wheat region of the state, the highest yielding varieties commercially available have been found by the agricultural college to be Fulhio, Fulcaster, and Michigan Amber, with Fulhio preferred by the milling industry.

In the southwestern part of the state where soft winter wheat predominates, most promising varieties are Illinois Progeny No. 2 and Fulcaster, among the bearded varieties, followed by Fulhio, Michigan Amber and other pure strains of Fultz.

Most promising commercially available strains in north central and northern Illinois where the hard winter wheats predominate are Cheyenne, Wisconsin No. 2 and the older strains of Turkey Red such as Illred, Turkey Red, Minturki, and Kanred.

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## Homemakers Start Keeping Home Accounts in September

With school supplies and school clothing taking toll from pocketbooks in September, and fuel supplies as well as other expenses on the increase, more than 800 homemakers in the state are taking stock of family resources through home account records now as well as in January.

In reporting this fall budget activity of Illinois homemakers, Mrs. Ruth Freeman, extension home accounts specialist, College of Agriculture, University of Illinois, explains that from five to eight minutes a day is all that is required to keep home account records up to date.

Divisions set up by account keepers as entirely satisfactory for the average family to use in recording expenditures and savings include: Food, clothing, shelter, including both house and furnishings, operating expenses, savings such as insurance and notes paid, and general expenditures. Classified under general expenditures are auto, health, recreation, education, church and community welfare, gifts and personal expenses.

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1936 Hessian Fly Infestation Is Moderate To Heavy

Since a moderate to heavy infestation of Hessian fly, most serious insect pest of wheat, exists in practically all sections of the state, three days' difference in the time of seeding may make a difference of 5 to 15 bushels to the acre in wheat yields.

This fact is revealed as a result of surveys recently completed by entomologists of the University of Illinois College of Agriculture, Illinois State Natural History Survey and the federal bureau of entomology.

In the northeast quarter of the state the infestation is low, running from 3 to 8 per cent, the survey shows. In all other sections the infestation will run from 15 to 50 per cent, averaging about 30 per cent for the western and southern sections.

While the extremely hot and dry weather has caused a high mortality of the Hessian fly in its summer stage, sufficient numbers are present in most localities to threaten serious fly damage to any early sown wheat, it is reported.

Fly-free date for the extreme northern section of the state is about September 18. This section reaches as far south as the central part of Henry, Bureau, LaSalle, Grundy and Will counties.

September 22 is the fly-free date for the next section which extends far enough south to include parts of Hancock, McDonough, Fulton, Tazewell, McLean and Ford counties. Growers in the central section which reaches to the middle of Pike, Scott, Morgan, Sangamon, Moultrie and Edgar counties may sow their wheat with safety after September 28.

The section reaching down to Madison, Bond, Clay, Richland and Lawrence counties is included in the October 3 date, while the next section reaching far enough south to include most of Randolph, Perry, Franklin, Hamilton and White counties comes under the October 8 date. Growers in the southern 10 or 12 counties should wait until October 11.

Wheat joint worm does not threaten in Illinois except in the southern one-fourth of the state. Time of seeding has no effect on joint worm infestation. It is normally kept down by insect parasites. However, in fields where the insect is abundant this year, if the stubble is fall plowed and cleanly turned under, joint worm numbers will be greatly reduced.

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Illinois Farmers To Study Economics In Evening Schools

Reflecting the growing interest Illinois farmers are taking in agricultural economics discussions, 26 counties have already scheduled agricultural economics and livestock marketing evening schools for fall and winter months, according to P. E. Johnston, extension specialist in agricultural economics, College of Agriculture, University of Illinois.

Agricultural economics schools, meeting one evening a week for four weeks, have been scheduled in Stephenson, Boone, Kane, Kendall, Livingston, Fulton, Adams, Pike, Morgan, Christian, Vermilion and Champaign counties. Other counties, which have not had the schools in past years, will be added later.

Last year these schools were held in 41 counties and Johnston hopes eventually to conduct the courses in each Illinois county.

In 14 of the counties where the courses were offered last year, R. C. Ashby, professor of livestock marketing, will conduct livestock marketing meetings. Limited to one evening, these courses will be given in Jo Daviess, Carroll, Whiteside, Henry, Bureau, Stark, Knox, Peoria, Marshall-Putnam, Woodford, Tazewell, Hancock, Schuyler and DeKalb counties.

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UNITED STATES DEPARTMENT OF AGRICULTURE

WATER RESOURCES DIVISION

WASHINGTON, D. C.

1960

The following information was obtained from the records of the Division of Water Resources, Department of Agriculture, for the year 1960:

The total amount of water used for irrigation purposes in the United States during the year 1960 was 11,400,000 acre feet.

The total amount of water used for domestic and industrial purposes in the United States during the year 1960 was 1,400,000 acre feet.

The total amount of water used for power generation purposes in the United States during the year 1960 was 1,400,000 acre feet.

The total amount of water used for navigation purposes in the United States during the year 1960 was 1,400,000 acre feet.

UNITED STATES DEPARTMENT OF AGRICULTURE

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1,000,000 Tons Of Limestone Is 1937 Goal For Illinois

With the drouth emphasizing the importance of clovers and alfalfa for hay and pasture, Illinois farmers this year will use nearly 750,000 tons of agricultural limestone, a requirement of most soils for a successful stand of these legumes, C. M. Linsley, soils extension specialist, College of Agriculture, University of Illinois, estimates.

Provisions of the 1936 farm program have aided in boosting this limestone tonnage, the largest since 1929 when 925,000 tons were spread on fields of the state. A goal of one million tons for 1937 has been set by the extension service of the agricultural college which for a number of years has sponsored soil improvement and soil testing programs in the state.

More than one-half million acres of Illinois land will be tested for limestone needs at local meetings this year, Linsley reports. Using tests recommended by the agricultural college, farmers making soil tests under the supervision of their farm advisers are able to tell where limestone is needed and how much is needed to the acre. A similar test for available phosphorus indicates where phosphate is needed.

One of the leaders in the soil testing project, Madison county this year has tested 11,000 acres for 406 farmers. During the period 1923 to 1934, farmers in this county spread 230,000 tons of limestone. This county in 1934 grew 11,000 acres of sweet clover and 17,800 acres of alfalfa, the largest alfalfa acreage of any county in the state, equal to one acre of alfalfa to each 15 acres of farm land in the county.

In Piatt county this year 150 farmers have tested 8,000 acres for acidity and phosphate needs. Five thousand acres have been tested by 195 farmers in Effingham county, and in Franklin county 456 farmers attended a series of 25 soil testing meetings where 3,890 acres were tested. With more meetings yet to be held, Edwards county has already tested 1,880 acres.

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Cattle Feeders To Stretch Feed Supplies To Limit

Illinois feeders this season will have as many cattle on feed as the feed situation will warrant.

This is the opinion of H. P. Rusk, head of the animal husbandry department, College of Agriculture, University of Illinois, based on a recent survey of 637 cattle feeders of the state.

Having fed 48,000 cattle this year, these men indicated an intention of feeding approximately 35,000 during the coming feeding season, or 72 per cent as many cattle as they fed in 1936.

"Many of these feeders plan for shorter feeding periods or lighter grain rations," Rusk said. "Some undoubtedly will attempt to make butcher cattle with silage made from drouth corn and little or no additional grain. Others will use considerable oats in the ration and some will feed molasses as a substitute for a part of the corn normally fed. Feed supplies will be stretched to feed as many cattle as possible.

"As a class dairymen are probably in the best position to make the most effective use of drouth-stunted corn. Their regular silo capacity can be supplemented with the temporary picket-fence silo or trench silo where corn to fill them is available.

"However, one cannot go into the dairy business merely to market one crop of corn," he continued. "If the farmer is not a regular livestock producer and is planning on feeding operations merely to market his drouth corn, he is limited largely to beef cattle or possibly sheep."

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
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## Proper Use Of Terraces Important In Erosion Control

Solution of the erosion problem which is recognized as serious on more than 18,000,000 acres of Illinois land lies in terracing coupled with good soil and crop practices on slopes not too steep and pastures and trees for the steeper slopes.

This is recommended in "Terraces to Save Soil," a new circular issued by the College of Agriculture, University of Illinois containing a discussion of terrace construction and maintenance. The circular was prepared by E. W. Lehmann, head of the department of agricultural engineering, and R. C. Hay, extension specialist in agricultural engineering.

"Terraces not only save soil, but also are easier to cross with farming equipment than are gullies," the authors state. "Farming terraced land is not difficult once the farmer is willing to give up straight rows and try contour farming.

"Terraces also make for more efficient crop production at lower cost. Corn yields on terraced tracts of the Vienna experiment field in Johnson county averaged more than twice the production on the unterraced check area."

If only a limited amount of time can be spent in terracing, it is much better to build the two upper terraces well than to build four or five carelessly or inadequately, the circular recommends. On moderate slopes free from gullies and with experienced operators in charge of efficient equipment, the cost of terrace construction has been estimated to be about as much as plowing the land once.

In emphasizing the importance of proper terrace maintenance, the authors warn that no system of terraces however well planned and constructed can be successful over a period of years unless kept in good repair.

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## Vivid-Colored Clothing Safety Measure For Children

Conspicuous clothing can rank along with habitual watchfulness as a safety measure in preventing school children from being hurt on the highway, says Miss Edna Gray, extension specialist in clothing, College of Agriculture, University of Illinois. Backing up the federal bureau of home economics' suggestion that "children should be seen and not hurt," she advises the use of bright-colored outer garments which can be seen readily from a distance.

In contrast to the dark maroons, black, dark blue or gray coats which blend so easily into the roadside and walks on dusty winter evenings, Miss Gray recommends vivid colors--the popular bright wine-reds of this winter, bright blues, greens and oranges. If it is out of the question to have a new coat, she suggests bright scarfs, cap and matching mittens.

Since children dislike to fasten complicated garments, Miss Gray recommends simple, easily adjusted clothing. This will avoid the possibility of loose clothing catching on moving vehicles or obstructing freedom of movement at any time, she points out. Hat and caps which tend to droop over the child's eyes and scarfs which fly in the wind are two clothing hazards cited. A bright winter snow suit is ideal for many children, Miss Gray believes.

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Winter Barley Acreage In State Expected To Increase

Well suited both for pasture and grain, winter barley is gaining in favor among Illinois farmers who because of the drouth are in need of fall and early spring pasture as well as an early crop of grain feed and straw.

So finds George H. Dungan, professor of crop production, College of Agriculture, University of Illinois, who anticipates that the five-year average of 275,000 acres of barley for the state will be exceeded this year.

"Blades of the barley plant are broad, fast growing and easily cropped by grazing livestock," Dungan explained. "Winter barley will grow well into early winter and will start a new spring growth soon after winter breaks. The grain ripens early thus making winter barley suitable for use as a nurse crop for clovers and small seeded grasses.

"In addition to furnishing pasture, winter barley will yield a fair crop of grain. Its greatest handicap in northern Illinois is its tendency to winter-kill. However, some barley lived through the severe winter of 1935 in northern Illinois."

Dungan recommends that the land be prepared in the same way as for winter wheat, seeding the crop 6 pecks to the acre for grain alone or 8 pecks to the acre for pasture or pasture and grain. Since winter barley is not bothered by the Hessian fly, it is best seeded earlier than wheat.

Relative to varieties, Dungan stated that while Missouri Early Beardless is not a high yielder in Illinois, it stood the winter well on tests last year and fits into a program of pasture, grain and straw for livestock. Seed of this variety is available in relatively large quantities in Missouri. Dungan advised that unless an Illinois source of seed is known, certified seed may be obtained through the Missouri Corn Growers' Association, Columbia. Purchase of certified seed is a sure way of avoiding garlic, wild onions and cheat, so common in some areas, he pointed out.

A small pamphlet giving results of varietal tests of barley has just been published by the College of Agriculture and may be obtained upon request.

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Illinois Farmers Using All Means To Conserve Forage

Illinois farmers in a year of drouth and grasshopper damage are taking advantage of every possible opportunity to conserve feed and forage for the coming winter, according to reports received by the College of Agriculture, University of Illinois, from local farm advisers.

Making use of permanent and temporary silos, Bond county farmers will have a large supply of silage for their livestock, Farm Adviser I. F. Green reports. "Although there will be little grain feed, farmers are facing the winter with more roughage than for several seasons," he continued.

Several Adams county farmers, according to Farm Adviser S. F. Russell, are planning to try out winter barley as a pasture and early grain crop. With 300 trunch silos constructed during the 1934 drouth, Adams county reports still more farmers turning to this method of conserving forage during the present emergency.

Temporary silo construction is under way in Johnson county, Farm Adviser O. O. Mowery reports. In a number of counties, the extension service of the College of Agriculture has assisted in meetings in which the construction and use of temporary silos were demonstrated.

Farmers throughout the state are attempting to conserve all available supplies of grass and legume seed. George H. Reid, Scott county farm adviser, states that several fields of alfalfa will be harvested for seed, and that the yield of red clover and alfalfa seed is good.

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### Pickling Last Vegetables From Garden Conserves Food

The last garden vegetables may be used up to good advantage by making them into pickles this fall, suggests Miss Lulu Black, home adviser at large in home economics extension, College of Agriculture, University of Illinois.

Thus she answers the question of many Illinois homemakers who are conserving food from every possible source for fall and winter meals.

Pickles are one way of putting pep into the menu, and a wide variety of vegetables are available to further the cause, Miss Black points out. September offers tomatoes, cucumbers, beans, peppers, onions, cabbage, corn, melons, sweet apples and grapes for pickling.

Answering the shrinkage problem with which home canners of pickles have to deal, shrivelled or shrunken pickles, she explains, may be caused by the use of too much salt or sugar or vinegar that is too strong. If very sweet or sour pickles are desired, she finds it is better to first place them in a weak solution and then into a more concentrated solution.

While a smaller garden yield will enable homemakers to can cucumber pickles immediately, some families may prefer to use the brining process. Entirely successful in most cases in producing firm cucumber pickles, the brining process may also be responsible for soft or slippery pickles. This occurs when the brine is too weak to prevent the action of spoilage bacteria or when the pickles are exposed above the brine. Accuracy is highly essential, according to Miss Black. A good brine is made by adding 1 pound of salt to 9 pints of water. The volume of brine necessary is about half the volume of material to be fermented, she says.

Hollow pickles may also result from holding the cucumbers more than 24 hours before placing them in the brine.

Among recipes especially recommended at this time by Miss Black and appearing in the College of Agriculture, University of Illinois bulletin, "Suggestions for Making Pickles," are mixed vegetable pickle, which may finish up the last few vegetables in the garden. Recipes also are given for corn relish, spiced grapes, pickled peaches, and pickled watermelons.

The meat, potato and pickle meal has gone out with the coming in of new nutrition ideas, says Miss Black, for the pickle does not contain much food value. However, it may lend interest to dull menus this winter. The bulletin may be obtained free of charge by writing to the College of Agriculture, University of Illinois.

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### Poorest Soils Make Best Response To Soil Treatment

Those Illinois soils which produce the lowest yields without treatment make the best response to soil-building practices, according to a new bulletin "Crop Yields from Illinois Soil Experiment Fields," published recently by the College of Agriculture, University of Illinois.

"With the less productive soils, the increased yield from treatment was several times as great as the yield obtained without treatment," the bulletin states. "However, on the more productive soils yields from the plots without treatment were several times as great as any increase that could be attributed to soil treatment.

"Despite this fact, on each field there was found at least one practice that raised the efficiency of production enough to pay for the treatment.

"Whether the crop-producing capacity of the less productive soils can be raised to the present productive levels of the better soils seems doubtful. The gray and yellow soils after 25 years have potential levels only about one-half the level of the better untreated soils."

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## Hoppers And Chinch Bugs Worst Insect Threats In '37

Chinch bugs, grasshoppers, Hessian fly, southern corn root worm and in certain areas moderate infestations of white grubs predominate among the insects with which Illinois farmers will have to contend in 1937, according to W. P. Flint, chief entomologist, College of Agriculture, University of Illinois, and Illinois State Natural History Survey.

Flint based his prediction on studies of the abundance of different insects in the state this season.

"In making any insect prediction from a period six months to a year in advance, it is always necessary to point out that the weather of the coming season may be such that no change in cropping system would be justified," Flint explained.

"Insects causing heaviest losses next year will probably be grasshoppers, chinch bugs, and southern corn root worms," he continued. Since all of them are heavy feeders on corn, it would seem wise to reduce corn acreage if this crop represents a high proportion of the crops grown on any particular farm and thus make the fight a little easier.

"If the corn acreage is moderate and planted largely or entirely to hybrid corns of known chinch bug and root worm resistant strains, chances of damage would be reduced at the outset."

Relative to grasshoppers, Flint urged that control measures be started in the early stages of their development as hoppers can be poisoned at minimum expense for labor and materials shortly after they are hatched. While they are heavy feeders on soybeans and alfalfa, grasshoppers cause practically no damage to winter wheat grown under Illinois conditions. Soybeans are chinch bug proof and are relatively resistant to other insects except grasshoppers.

Hessian fly and chinch bugs threaten the greatest danger to wheat, Flint reported. However, chinch bugs do not cause serious damage to wheat grown on good ground where the growth of the wheat is strong and the stand good. They avoid such fields to concentrate on poorer stands where the plants are less vigorous.

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## Hybrid Seed Corn Crop Five Times Larger Than In '35

Hybrid seed corn, the latest step in corn improvement, will be about five times as plentiful in Illinois in 1937 as in 1936, according to W. J. Mumm, associate in plant breeding, College of Agriculture, University of Illinois.

Approximately 6,000 acres of hybrid seed corn are being produced in the state this year as compared with only 1,800 acres last year, Mumm reported. Hybrid seed production this year is expected to run between 150,000 and 200,000 bushels, or enough to plant one million acres, about 15 per cent of the entire corn acreage of the state. Last year's supply of seed was sufficient to plant only 200,000 acres. With a proportionate increase in hybrid seed supplies next year, Mumm anticipates that sufficient seed may be available to supply nearly every farmer in the state who desires it in 1938.

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### Illinois Leads In Rapid Growth Of Soybean Industry

Soybeans have forged ahead so fast as one of the newer farm crops that there are now about 35 soybean mills and a number of cottonseed mills crushing soybeans for oil and oil meal, 20 concerns are manufacturing soybean products, 15 mills are making soybean flour and more than 50 factories are turning out various industrial products from soybeans.

In a new circular just issued by the College of Agriculture, University of Illinois, circular No. 461, "The Soybean, A Plant Immigrant Makes Good," W. L. Burlison, head of the agronomy department, lists these facts as evidence that the soybean has made a place for itself in the industrial life of this country.

"Although relatively new in the United States, the soybean is one of the oldest crops grown," Burlison points out. "It was described in a Chinese medical book written by Emperor Shen-Nung about 4,800 years ago. Soybeans were introduced into the United States in 1804, yet a hundred years later few were grown outside the southern states. Figures for 1935 indicated 39,637,000 bushels of gathered beans, most of which were produced in the corn belt."

One-half of the beans crushed in America in 1935 were produced in Illinois, Burlison reports. The crop averaged 18 bushels to the acre in the state last year and cost records show that soybeans were produced for 63 cents a bushel as an average for the three-year period, 1931-1933.

First production of soybean oil in the United States was in North Carolina in 1910, and in the middle west at Chicago Heights in 1920. Last year 91,000,000 pounds of high-grade oil were produced in this country.

Outstanding among the uses for soybean oil is its use in paints and varnishes. Tests of soybean oil paint were first started by the College of Agriculture in 1930. The university is now making liberal use of soybean paint.

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### New Projects To Enliven Winter For 4-H Club Girls

Long evenings of the approaching winter will be shortened for Illinois farm girls and others enrolling in 4-H club work by means of two new activities known as the leisure hour project and the party-a-month club, announces Miss Mary A. McKee, girls' 4-H club specialist of the College of Agriculture, University of Illinois.

Designed as means by which local 4-H clubs may remain organized during the winter months, and at the same time offering something interesting and educational to do, the leisure hour project is going into its fourth year of popularity, Miss McKee reports. Starting out with an enrollment of 300 girls the first year, the project was carried by more than 800 4-H club members last year.

The party-a-month club is being inaugurated this year following the requests of 4-H club members and leaders who wish to learn more about the methods of entertaining as well as a means whereby the club members can have good times together.

Included on the list of suggested articles for the leisure time project are the making of a quilted or cross-stitched handkerchief case, the making of individual letter stationery from charcoal paper or wrapping paper, knitting of a purse or scarf, and the making of large sports handkerchiefs or scarfs from decorative cotton or linen material.

For girls interested in cooking, suggestions are given on the making of various ices and ice creams. New recipes for the making of peanut brittle, pinoche and gelatin candies are offered to those interested in the candy project. Girls may learn how to make potato chips, or the interesting pinwheel, filled sugar and fudge drop cookies, says Miss McKee.

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Farm Home Kitchens Can Be Rearranged At Low Cost

Rearrangement of a farm kitchen to make it a more pleasant and convenient place in which to work has been accomplished on as little as 27 cents, and many homes have been modernized for less than \$10, reports Miss Gladys Ward, home economics specialist in home management, College of Agriculture, University of Illinois.

Contrary to the opinion that a large cash outlay is necessary to bring the country kitchen up-to-date, Miss Ward points out that eight changes totaling 27 cents were made in one kitchen through the combined efforts of husband and wife. Idle lumber was used to build shelves near the work center. A drain board was placed on the sink, and a large portion of the kitchen equipment was rearranged to give better efficiency.

Homemakers have been known to walk as far as ten or more miles a day within the boundaries of their kitchens owing to poor arrangement of equipment, Miss Ward said. Fatigue and inefficiency are pointed out as direct results when the refrigerator is located down cellar or when the sink and drain are in the pantry. Since the average homemaker spends approximately one-half or more of her time in the kitchen a practical adjustment of many of these problems is known to save a considerable portion of her time and energy.

Among the faults commonly found in the hundreds of Illinois homes which Miss Ward has helped to modernize within the last few years are size of kitchen is wrong for the size of the family, location of kitchen equipment is inconvenient, drinking water must be carried from a distant well, too many activities are carried on in the kitchen and insufficient light and ventilation are provided.

A few simple remedies will dispose of the majority of faults in a practical economical manner, Miss Ward finds.

Kitchens built for families of 10 or 12 a few years ago and now too large for a family of four or five may be planned so that working space and the sink are on one side of the room, the washroom on another side and a possible rest or professional corner provided for the homemaker.

Having water piped into the farm house kitchen is probably the most important and the cheapest convenience to aid homemakers, it is found.

A screened-in porch which opens off the kitchen door may serve as a dining room in summer and as a storage room in winter, says Miss Ward. However a porch overshadowing kitchen windows will darken the room. Two windows which may provide direct sunlight and cross ventilation are recommended.

A large pantry may often be used for the laundry equipment. Good enamel paint applied to walls, ceiling and woodwork will make a durable, sanitary and easily cleaned wall surface, in Miss Ward's opinion, since heat and moisture are hard on wall paper.

Smooth, level wood floors may be protected by cementing down a good grade of linoleum. Varnish is recommended to lengthen the life of the linoleum.

Pots and pans located near the stove, knives near the sink and dishes near the dining table will help the homemaker save steps.

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Use of field ensilage harvesters in filling trench silos is spreading throughout the state, reports R. C. Hay, extension specialist in agricultural engineering, College of Agriculture, University of Illinois. By means of this equipment, corn is cut, put in silo and packed without being handled by hand, thus eliminating hard work and reducing costs.

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## Seed Corn Selection Offers Extra Premium This Fall

With the demand for seed corn expected to be heavy from states harder hit by the drouth and with hot September days hastening the ripening of corn, Illinois farmers are busily engaged harvesting seed corn for 1937, reports George H. Dungan, professor of crop production, College of Agriculture, University of Illinois.

The best time to harvest seed corn, he explained, is when the ears are well dented, with the grain in the dough stage, and when the husks are brown with some green in the upper leaves and in the stalks. He cautioned that a stalk that dies before the ear matures is probably diseased, badly injured by insects or weak in some other respect.

"If farmers prefer corn having resistance to cold, selection of seed may be delayed until after the first light frost," Dungan asserted. "This practice is recommended only when the leaves and stalks are green at the time of the frost. Those plants resisting effects of cold can easily be detected a few days after the frost. There is always danger of injury if the seed is left in the field until after frost, since the temperature may go low enough to kill the corn."

Characters to watch for in selecting seed corn, according to Dungan, are erect plants, ear medium height on the stalk, ear shank of medium length and not broken, stalks free from smut or marked purpling, stalks vigorous and strong, ears well covered by the husks, upper leaves free from extreme burning and ears mature, sound and free from rots.

"Attention to ear types is not of first importance at time of field selection," he pointed out. "This can be done better after the corn is cured. First consideration is parent plant selection.

"Seed selected from a field of second-generation hybrid corn can not be expected to yield any better than seed selected from a field of good open-pollinated corn," he continued. "However, in some instances second-generation hybrid seed has produced corn more resistant to lodging than the average open-pollinated varieties."

Dungan recommends drying the seed ears as soon as possible after they are harvested. On a small scale this can be done by placing the ears on hangers and providing for free movement of air around the corn. Some heat is desirable on wet days throughout the winter, but warmth without ventilation often causes mold.

"There is little or no work on the farm that pays greater dividends than the selection of seed corn," Dungan concluded.

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## Soil Survey Advances With Clinton Report Published

Thirty distinct soil types, each having its own definite characteristics and management problem, have been recognized in Clinton county and classified by the College of Agriculture, University of Illinois in a soil survey report which has just been published.

The Clinton county soil report is fifty-seventh in a series which when completed will cover the entire state. The purpose of the survey report which includes a map showing the location of each soil type is to provide every farmer or landowner with the basis of a rational system of soil management.

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### Soil Erosion Remains Problem Even In Drouth Years

Instead of solving the soil washing problem, the record dry weather of the past summer has made harmful erosion more threatening than ever on thousands of acres of rolling cultivated land in Illinois that are not protected with terraces, according to R. C. Hay, extension specialist in agricultural engineering at the College of Agriculture, University of Illinois.

"While soil losses have not been great during the dry spell the drouth has reduced vegetative cover making it easier for heavy rains to carry away valuable top soil," he explained. "Furthermore, the bare soil of new alfalfa and wheat seed beds is exposed to serious erosion losses from fall and spring rains unless protected by terraces."

For conserving the soil at less cost, Hay points out that it is best to terrace sloping land before serious erosion losses occur.

"The source of most difficulty in constructing the terrace system is terrace outlets," he asserted. "Run-off water from terraced fields must be drained off through an outlet which may develop into a troublesome gully unless properly constructed."

"Wide, shallow ditches, well sodded make the most satisfactory and most economical outlets. In some cases a natural draw may be used, while in others such an outlet ditch must be graded out. On fields that are to be terraced it is best to have a good sod established in the outlet before the terraces are built."

Locating and preparing outlet ditches are the first tasks undertaken by farmers who plan to terrace their fields. Suggestions on planning a terrace system, staking and constructing the terraces and farming terraced land are contained in Circular No. 459, "Terraces to Save Soil," written by Hay and E. W. Lehmann, head of the department of agricultural engineering, of the agricultural college. Copies of the publication may be obtained by writing the College of Agriculture.

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### Fertile Soil Protects Wheat Against Insect Damage

The more fertile the land on which wheat is seeded this fall, the less danger there will be from injury caused by Hessian fly and chinch bugs, says L. B. Miller, associate in soil experiment fields, College of Agriculture, University of Illinois.

"When the fly infestation is heavy as it promises to be in sections of Illinois this year, the presence of plenty of available phosphorus is often the factor which decides whether the wheat crop will be a success or failure," Miller explained.

In illustrating his statement, he quoted from yields obtained at the Carlinville Soil Experiment Field in Macoupin county. Three unphosphated plots last year averaged 7.1 bushels an acre, while three phosphate-fertilized plots in the same series seeded at the same time and with the same variety of seed made an average yield of 20.3 bushels.

On a series of plots in Montgomery county where the fly injury was especially bad in 1936, the untreated land made an average yield of only 3.4 bushels, while plots well supplied with phosphate drilled with the wheat averaged 19.9 bushels an acre.

"Wheat grown on land low in available phosphorus is an easy victim of Hessian fly, despite the date sown, and usually produces low yields even in seasons of little or no fly damage," Miller contended. "Furthermore, a fertile soil aids in the control of other insects. Experience has showed that well-nourished wheat seldom suffers severe damage from chinch bugs. They seem to prefer less vigorous plants growing on less fertile soil."

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### Simple Creosote Treatment Makes Posts Last Longer

Even willow and pin oak fence posts can be made to last 15 years or more if given a preservative treatment with coal-tar creosote, says J. E. Davis, extension forester, College of Agriculture, University of Illinois, and Illinois State Natural History Survey.

"If fence posts are treated with preservatives, inferior species removed from the farm woodland in improvement cuttings may be utilized and the more valuable species left to grow timber," Davis said. "Treating is not a difficult operation, and a treating plant can be set up easily at little expense. Cost of material for treatment varies from six to 10 cents a post."

Since green or split posts will not do for treating, he recommends that the posts be cut a year in advance, peeled and stacked loosely off the ground to season thoroughly. The 100-gallon drum in which creosote is obtained can easily be made into a post-treating tank by cutting out the head and setting the drum on a brick or stone base so that a fire can be built beneath it. A good thermometer that will register up to the boiling point is the only other essential equipment.

After 20 to 25 four-inch posts are in the drum, enough creosote is added to bring the level to about three feet. The creosote is then heated to 190 to 200 degrees Fahrenheit, with this temperature maintained for five hours and the creosote kept at the three-foot level. The fire is then drawn and the tank completely filled with creosote. After cooling for ten hours, the posts are removed, the upper ends dipped in the creosote, then stood up to dry and the process repeated on another group of posts.

Species of trees providing posts that require treatment are pines, hickories, maples, poplars, willows, red oak, black oak, pin oak, sycamore, gum, American elm, ash, basswood, buckeye, ironwood and birch. Species providing moderately durable posts which are improved by treatment are red elm, black cherry, butternut, sassafras, arbor vitae and tamarack. Those durable without treatment are hedge, black locust, mulberry, red cedar, white oak, post oak, burr oak, honey locust and catalpa.

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### Proper Housing Reduces Risk In Handling Herd Sires

Fatal accidents in which Illinois dairy farmers have figured in the past few years might have been avoided with a well-planned and well-constructed bull shed, exercise yard and safety breeding stall, according to Circular 460, "Managing the Dairy Bull," just issued by the College of Agriculture, University of Illinois.

Written by C. S. Rhode, dairy extension specialist, and W. A. Foster, associate chief in rural architecture, the circular gives floor plans for the construction of one- and two-unit bull sheds and lists the materials needed for their construction.

"Most dairymen are reluctant to use older bulls mainly because they consider their care and management too difficult and hazardous," the authors state. "However, these drawbacks can be overcome by well-designed housing and plenty of exercise.

"The easiest and safest way to provide needed exercise is through an exercising yard adjoining the bull shed. A yard 16 to 18 feet wide and 60 to 70 feet long is satisfactory, since bulls will take more exercise in a long narrow paddock than in a square one. The yard need not be expensively constructed. However, all fencing material should be set inside the posts, except iron pipes which may be set in concrete."

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## Alfalfa And Corn Are State's Most Profitable Crop

Alfalfa and corn continue to be the Illinois farmers' most profitable crop, with soybeans for the second year holding third place formerly occupied by winter wheat.

These ratings are reported by the department of agricultural economics, College of Agriculture, University of Illinois, on the basis of cost figures kept by a representative group of farmers in the east central part of the state. Covering a period of 16 years, the study shows alfalfa and corn to be consistent leaders with soybeans two years ago advancing into third place.

"Alfalfa showed a profit of \$7.94 an acre, corn \$3.10 and soybeans \$2.31, when the farm price of each crop at harvest was applied to the yield an acre and this figure compared with the cost of growing and harvesting each acre for the past three years," R. H. Wilcox, associate professor of farm management, explained.

"The profit to be derived from a feed crop is governed largely by the amount of feed nutrients produced an acre, since the costs of growing an acre of alfalfa, corn, soybeans, and oats average about the same."

In 1935 it cost \$19.86 to produce an average acre of alfalfa yielding two and one-half tons of hay. An acre of corn cost \$17.96, soybeans \$14.98 and oats \$14.47. These costs include taxes and interest on the investment in the land equaling about \$7.50 in the area studied. The report points out that despite the relatively low acre cost of oats, the farm value of the crop at harvest has for years failed to meet cost of production.

Net cost of producing a bushel of corn in the area last year was 30 cents with corn averaging 58 bushels an acre. Soybeans, with an average yield of 28.5 bushels an acre, were produced for 52 cents a bushel, and winter wheat, averaging 20 bushels an acre, cost 69 cents a bushel.

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## Jerusalem Artichoke No "Wonder" Crop For Illinois

Culture of the Jerusalem artichoke offers no more possibilities to Illinois farmers for easy profit than numerous farm crops that are extensively grown at present, according to W. L. Burlison, head of the agronomy department, College of Agriculture, University of Illinois. He is co-author of Technical Bulletin No. 514, "Studies of the Culture and Certain Varieties of the Jerusalem Artichoke," which has just been issued by the U. S. Department of Agriculture.

Within the last decade or so, a widespread interest has developed in the plant in this country largely as a result of its possible value as a source of raw stock for the manufacture of levulose and of alcohol. Interest in the crop and the seemingly immediate future possibilities have led to some unfounded optimism.

The new bulletin reports studies made by the federal department of agriculture in cooperation with Illinois and other state experiment stations to furnish a basis for developing an economical and efficient system of culture and to prevent as far as possible costly and disastrous experiences of farmers and others.

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### 50 Poultry Clinics In Progress In Drive On Disease

In a campaign to control losses of \$4,000,000 which Illinois poultry flock owners are suffering annually because of preventable poultry diseases, ten of a series of 50 poultry clinics for flock owners and schools of instruction for local veterinarians have been completed in as many counties of the state.

Local veterinarians and farm advisers are cooperating in the schools and clinics, which are being held by the extension service of the College of Agriculture, University of Illinois. The schedule of remaining meetings includes Effingham county, October 10; DeWitt county, at Clinton, October 14; Pope-Hardin, at Golconda, October 28, and Fayette, at Vandalia, November 3. Other clinics are yet to be scheduled.

Meetings have already been held in Champaign, Stephenson, Winnebago, Jefferson, White, Sangamon, Marion, Fayette, Ford and Iroquois counties.

"Examination of birds brought to the clinics by flock owners have confirmed the findings of the diagnostic laboratory of the college that intestinal parasites are the worst enemy of poultry," said Dr. Robert Graham, chief in animal pathology of the agricultural college, who has charge of the clinics and schools of instruction.

"Control of the alarming losses now being caused by parasites and other poultry diseases lies in improved methods of management," he continued. "This in turn means clean ground, clean houses, clean feed, pure water and proper balanced rations. No medicine can prevent disease, no mineral can insure health and no vaccine can prevent worm infection. The need is for simple measures of cleanliness."

As a result of the clinics local veterinarians are giving assistance to flock owners in the diagnosis of prevailing poultry diseases. This service will aid materially in preventing losses from disease, Dr. Graham believes.

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### 'Hoppers And Drouth Point To Need Of Crop Diversity

Grasshoppers and drouth the past summer have emphasized that Illinois farmers pay out 80 to 90 per cent of the total expenses of growing and harvesting a crop before the crop starts to mature and before they have any assurance of grain formation.

This fact, according to R. H. Wilcox, associate professor of farm management, College of Agriculture, University of Illinois, emphasizes the need for diversity in cropping systems.

"Diversity," he explained, "will spread the risk of weather and insect damage over crops that can use stored up soil moisture and that make their seed development during different months of the growing season. A diversified cropping system also makes for a more economical operation of the farm."

"There is probably no other large industry where cost of operation has so little control over total output as in crop production. In east central Illinois, during the dry year of 1934, a representative group of corn growers obtained an average yield of 26.5 bushels an acre. Their growing costs that year were 90.3 per cent of the cost of the corn in the crib. Last year, on these same farms, when the corn yield was 58.2 bushels, growing costs were 81.8 per cent of the total."

Among the small grain crops, fixed and growing expenditures, necessary before there is any indication of what the yield will be, are a higher portion of the total cost than they are in the case of corn, Wilcox asserted. During the past three years, 88 per cent of the cost of producing soybeans was in the crop before the combine entered the field. For winter wheat, 88 per cent of the total cost of producing the crop and for oats 83 per cent was necessary before harvesting operations began.

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### Thrifty Homemaker Buys Blankets Before Cold Weather

Although August was the economy month for buying blankets, many homemakers may have put off that duty until now, owing to the discomfort of hot weather, says Miss Dorothy Iwig, home economics extension specialist in home furnishings, College of Agriculture, University of Illinois.

In that case, the sooner the blanket is bought the better. For, as Miss Iwig puts it, "putting off the purchase of warmer bed covers until the first cold night has led many a housewife to pick up the first blanket which the store offered without respect for practicability or future comfort."

Buying blankets in advance enables one to select the specific blanket for the purpose and to make sure of all the details which lead to warmth, size, and durability.

Read the label, is her first pointer. Some blanket manufacturers are giving more information on the label, especially in regard to the percentage of wool in their articles. While they are not required to do this, in many cases they are trying to conform to some fairly certain standards which have been set up, she says. If the article is not labeled, Miss Iwig urges homemakers to ask for specific information.

No finished blanket containing less than 5 per cent wool can carry the word "wool" in any form. Blankets labeled "part wool" contain from 5 to 25 per cent wool--no more, no less. If more than one-fourth of the blanket is wool, the homemaker should be able to tell the exact percentage of wool by reading the label. When 98 per cent or more is wool, the blanket can be labeled "all wool," says Miss Iwig.

Part wool blankets, she explains, generally have a cotton warp and a wool or wool and cotton filling. They can be made nearly as warm as wool if the nap is kept fluffy and soft. Insulation which gives a blanket its heat-retaining properties depends upon the texture. Soft, even, deep, firmly held in yarn gives the maximum strength. A weave which is close and even gives warmth and wearability.

Durability, according to Miss Iwig, depends on the quality of fiber and the amount of napping on the blanket. Long fibers give the best service. Loose fibers often roll up in little balls. A test Miss Iwig uses is to pull gently on the nap to see if it holds firm, or comes out easily. If loose, short fibers are probably present.

Other pointers Miss Iwig gives are to make sure the bindings and finishes are durable and will not shrink. Two rows of stitchings on sateen and satin bindings and a lock stitch on cottons is recommended. Bindings should be boxed at the corners and folded back an inch or so.

General appearance, which depends on how well the color is retained, is an important item to consider, as is the fact that the ends of the blanket should be cut straight. One can tell the latter fact by holding a blanket up to the light to see if the end is cut parallel to the filling threads.

Securing blankets long enough to stay tucked in at the foot may be achieved by measuring the thickness and depth of the mattress, then adding six inches for tucking in, while allowing plenty of material at the head.

Single bed blankets average 54 to 76 inches to 60 by 84 inches. Blankets for twin beds range from 66 by 76 inches to 66 by 90 inches. Double bed blankets come in sizes 68 by 80 inches, 70 by 80, 72 by 84, and 80 by 90 inches. In any event the blanket should be 16 inches wider than the bed and from six to 16 inches longer.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
Experiment Station, and Extension Service

Volume XIX

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## 13 Million Trees To Be Set In 28 Illinois Counties

Approximately 13,000,000 trees will be planted this fall and next spring to control erosion on 6,000 acres of steep or badly eroded sloping land in Illinois, reports F. A. Fisher, state coordinator of the Soil Conservation Service.

Among the counties in which plantings will be made are Jo Daviess, Stephenson, Carroll, Mercer, Peoria, Woodford, Tazewell, McLean, Adams, Schuyler, Pike, Morgan, Macon, Greene, Jersey, Macoupin, Madison, Bond, Coles, Lawrence, Edwards, White, Randolph, Jackson, Williamson, Pope, Mason and Winnebago.

In making plans for the plantings, officials of the Soil Conservation Service cooperated with J. E. Davis, extension forester, College of Agriculture, University of Illinois, and Illinois State Natural History Survey.

Trees are planted only on those areas which are too steep or too severely eroded to be used for cropping purposes or for pasture, Fisher says. Fall planting season opens about October 15 and will continue until late in November.

Species to be planted this fall consist almost entirely of hardwoods and include black locust, green ash, white ash, black walnut, white oak, red oak, burr oak, and small numbers of a few other species. Trees for both fall and spring planting will be obtained from nurseries at Havana operated by the Soil Conservation Service in cooperation with the Illinois State Department of Conservation.

Many small patches will be planted to provide food and cover for game birds and animals. Some of the trees and shrubs used for wild life plantings are wild plum, wild grape, dogwood, bittersweet, honeysuckle, thorn apple and high bush cranberry.

More than 35,000,000 trees and shrubs on 15,000 acres already have been planted by the Soil Conservation Service in the past two years.

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## Hybrid Corn Thrives Despite Setbacks From Season

Hybrid corn is showing up to advantage again this season, demonstrating its superiority in years of drouth and grasshopper pestilence, according to reports received by the College of Agriculture, University of Illinois from farm advisers who are holding hybrid corn field days over the state.

Woodford county has some hybrid corn that should yield from 80 to 90 bushels an acre, reports Farm Adviser H. A. deWerff. More than 200 Woodford county farmers attended a recent hybrid corn demonstration tour, reflecting the interest being taken in that county in hybrid corn, the latest development in corn improvement.

A county-wide hybrid corn day was held in DeWitt county, Farm Adviser H. N. Myers states, and Iroquois county also held a hybrid corn field day. In Jackson county three hybrids gave from 10 to 15 bushels increased yields over open-pollinated varieties, but in each case, it is reported, the hybrids showed greater damage from ear worms. In Tazewell county a hybrid corn day attracted 150 farmers, and two all-day schools of instruction on hybrid corn were also well attended.

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### Better Cropping Systems To Be Pushed In 18 Counties

Planning a cropping system that follows practices recommended for conserving soil fertility and organizing the farm for more efficient production are problems that will be considered in a series of all-day meetings of farmers in at least 18 Illinois counties during October, November and December.

Open to all farmers interested in improved farm management, the meetings have already been scheduled by the extension service of the College of Agriculture, University of Illinois in Henderson, Warren, McDonough, Fulton, Knox, Stark, Peoria, Logan, Sangamon, Montgomery, Shelby, Piatt, Ford, Edgar, Coles, Wabash, Edwards and Jackson counties.

Dates and places of each meeting will be announced by the local farm adviser. Additional meetings are yet to be scheduled.

A portion of the meetings will be in charge of J. B. Cunningham, and the remainder will be conducted by M. L. Mosher, both of the agricultural economics department of the college.

The morning session will be devoted to a discussion of established principles of farm management which have been found sound after analyzing 18,000 financial records kept by farmers in cooperation with the college and the local farm advisers. In the afternoon each farmer present will apply these principles to his own farm, endeavoring to work out the best possible cropping system to fit all of his conditions.

An outgrowth of the farm management service in which record-keeping farmers of the state have been cooperating for the past 10 years, the meetings represent an effort to pass on the benefits of this study to additional farmers.

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### Culling Protects Flock Profits As Feed Prices Rise

With feed prices soaring, Illinois farmers who are counting on eggs this fall as a source of cash revenue will need to watch closely those practices which tend to lower production costs, advises H. H. Alp, extension poultryman, College of Agriculture, University of Illinois.

Feed is usually considered to be 60 per cent of the total cost of producing eggs. However, Alp points out that it will be folly for most flock owners to attempt to concoct cheap rations by using unsatisfactory substitutes for some of the standard grain ingredients.

"It will pay in most cases to stick with the regular proved rations and to look elsewhere for ways of lowering the cost of production," Alp said.

"Culling the flock to eliminate all birds except those in top physical condition is one method of lowering production costs. Culling not only helps to eliminate wasteful feeding, but also tends to lessen chances of future mortality.

"Reducing the size of the flock to fit the house so that each bird has four square feet of floor space is also important. Special attention to an adequate supply of water, especially during cold weather, will also go a long way toward lowering production costs.

"Cleanliness of the water is as vital as the abundant supply," Alp continued. "Keeping the water clean, not by pills but by clean dishes and stands, is one of the chief methods of obtaining efficient egg production. Furthermore, the value of good care and cleanliness around the poultry house can not be overestimated."

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Since each section of the state has its own set of climatic conditions, soil types and fertility levels, the College of Agriculture, University of Illinois, each year conducts performance tests of hybrid corn to determine the right hybrid for each section of the state.

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### Feed Agency Seeks Any Available Feed in Illinois

Illinois farmers, feed dealers and shippers can help relieve the shortage of feed in drouth areas by listing with the Federal Livestock-Feed Agency, 755 Livestock Exchange, Kansas City, Mo., any information on hay or other forage which they have for sale and available for shipment to drouth areas.

Notice to this effect has been received from the Kansas City office by the extension service of the College of Agriculture, University of Illinois.

This information on available feed supplies is furnished by the federal agency to buyers of feed in drouth areas. Such buyers whether they be in Illinois or other states are advised of the nearest source of the type of feed they desire. A similar service is available for sellers and purchasers of livestock.

More than a quarter million carlots of hay and other roughage have already been listed with the emergency agency as available for shipment to drouth areas wherever feed is needed. The agency does not actively buy or sell, but aids in the orderly transfer of feed and livestock to and from drouth areas and regions of more nearly normal rainfall.

In the 1934 drouth emergency the distribution of soybean hay, corn fodder, feeding straw and many other classes of roughage and forage not ordinarily marketed through the regular trade channels played an important part in carrying livestock until feed crops became available in the spring growing season of 1935.

Additional information about the agency may be obtained by writing direct to Kansas City or from county farm advisers.

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### Use Of Limestone Heavier In Many Illinois Counties

More limestone is being spread in Effingham county this year than during any previous year, according to Farm Adviser V. D. Evans, in a report to the College of Agriculture, University of Illinois.

Extensive use of limestone is not confined to Effingham county, however, as Farm Adviser H. A. deWerff says that limestone shipments in Woodford county this year have been greater than any season since 1929. During the month of September alone farmers in Jefferson county ordered 28 carloads of stone. In Pike county Farm Adviser W. B. Bunn last month tested 10,000 acres for limestone needs for 327 farmers. As many as 27 carloads of stone were applied to fields in Franklin and Hamilton counties.

C. M. Linsley, soils extension specialist, College of Agriculture, University of Illinois, estimates that 750,000 tons of limestone will be applied to Illinois fields this year.

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### Soybean Oil Meal Helps Cheapen Rations For Layers

Soybean oil meal, costing approximately one-third less than meat scrap, may successfully replace part of the meat scrap in a balanced egg mash ration, says H. H. Alp, extension poultryman, College of Agriculture, University of Illinois. A possible protein combination to be used with 400 pounds of mash might be made up, says Alp, of meat scrap 50 pounds, soybean oil meal 50 pounds, steamed bone meal 10 pounds, ground limestone 5 pounds and salt 5 pounds.

One hundred hens not laying will eat approximately 19 pounds of feed a day, 100 hens laying 50 per cent will eat around 24 pounds and 100 hens laying 70 per cent will eat about 26 pounds a day. This evidence that high egg production lowers feed costs is ample reason for giving the poultry flock proper care and management.

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# The Extension Messenger

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## Erosion Control Benefits Showing Up On Many Farms

Heavy fall rains have brought home in striking manner the benefits of steps which farmers have taken to check erosion and conserve rain water for drouth seasons, according to officials of the College of Agriculture, University of Illinois.

Unless protected, sloping land that is cultivated loses as much as 75 per cent of the rain water as immediate run-off, they pointed out.

What has been accomplished this season in checking soil wastage and costly erosion has been studied by farmers during the past few weeks in erosion tours that have been held in a number of counties of the state. These tours have been sponsored by the extension service of the College of Agriculture, University of Illinois, the Soil Conservation Service of the federal department of agriculture, CCC camps, county soil conservation associations and local farm advisers.

In Adams county visits were made by interested farmers to the farms of T. W. Turner, James Robertson and Anderson Donley where earth, rock and concrete dams, terraces, sodded water outlets and other phases of erosion control were demonstrated.

Coles and Cumberland county farmers attended a tour of the CCC camp near Charleston where soil erosion work now in progress was explained. Terracing and soil management were featured in a Macon county soil conservation tour with R. C. Hay and C. M. Linsley, of the extension service of the agricultural college, present to discuss erosion control and soil fertility maintenance.

More than 100 farmers from Madison and adjoining counties attended a tour of Madison county farms. A similar study of erosion control was made on a McLean county tour. Mercer county reports a number of terraces under construction, as does also Randolph county. Tazewell county farmers visited eight farms where extensive erosion control work is being carried on.

Four farms were visited by farmers attending the annual Jackson county soil erosion tour, reports Farm Adviser J. G. McCall. At the C. J. Thomas farm, south of Carbondale, members of the tour saw terraces with sodded outlets and a special type of hillside plow for use in contour farming.

A terracing machine owned by the county soil conservation association was in operation at the Frank A. Easterly farm when the group arrived. Conservation of water and erosion control was demonstrated at this stop where the group saw a terrace outlet emptying into a pond in which a drop inlet culvert pipe had been installed.

Attention was also directed to a well managed woodland on a field which was in corn 35 years ago. The stand of black locust and other hardwood species of trees was thinned under the supervision of the extension service forester.

At the H. C. Wolfe farm, near Murphysboro, the group saw a terrace outlet dam in the process of construction and at the Henry Quernheim farm watched contour plowing with horse power and inspected contour pasture furrows.

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60-Bushel Corn Crop Is Produced On Steep Hillsides

How to produce 60 bushels of corn to the acre and at the same time maintain a fairly deep covering of fertile soil on steep slopes was demonstrated recently on the farm of Otto Berlage, Jo Daviess county, as members of a farm management tour stopped at his place.

His total yields for last year, including 76 bushels of oats and 1.8 tons of alfalfa hay an acre, were considerably larger than the average of other farms on more level land on which farm account records were kept, reports J. B. Cunningham, extension specialist in farm management, College of Agriculture, University of Illinois, who conducted the tour.

Members of the group found all of Berlage's tillable land limed, with the result that he is able to have 64 per cent of his tillable land in alfalfa and clover. They found good quality livestock effectively utilizing all the feed crops produced on the farm, making it possible to return manure to fields from which crops were removed.

Among other practices fostered by the extension service of the agricultural college to increase the efficiency of crop and livestock production which members of the tour found demonstrated at the Berlage farm was an improvement program on non-tillable pasture land including the poisoning of white grubs in bluegrass.

To control erosion, Berlage has terraced some of the more moderate slopes and practices strip farming on others. A few steep hill sides have been reforested, and a long diversion ditch has been built high on a hill side to carry off water and keep erosion at a minimum.

"In addition to his good farm management and soil conservation practices, Berlage has balanced his power and labor set-up to the needs of the farm," Cunningham said.

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'Hopper Eggs Three To Five Times Thicker This Fall

While it is impossible to forecast the number of grasshopper eggs that will hatch next spring, W. P. Flint, chief entomologist, College of Agriculture, University of Illinois, and Illinois State Natural History, reports that a preliminary examination in central Illinois showed 'hopper eggs to be from three to five times as abundant as in the fall of 1935.

The central Illinois check-up was the start of the annual survey made by entomologists of the agricultural college and the Natural History Survey to learn the location and density of grasshopper egg beds. Results of the survey provide farmers with some idea as to how much 'hopper damage to expect next year.

Since many 'hoppers are still alive and capable of laying eggs, it has been impossible to start the survey earlier this year, Flint indicated. A complete report will be made available as soon as the survey is completed, which Flint expects to be around the middle of November.

The abundance of eggs this fall has been favored by the ideal laying conditions of late August, September and early October. Fall plowing will destroy those eggs laid in fields. However, the preliminary check-up in central Illinois showed the greatest concentration of eggs to be along fence rows, ditch banks, field margins and road sides where they are not reached by plows.

Despite the fact that cold winter weather has little effect on the eggs, much depends upon the weather next spring and upon predators and parasites. Warm spring days with some gentle rains will favor hatching. Insects which feed upon grasshopper eggs are present in such small numbers that they can not be counted upon to destroy more than 5 to 8 per cent of the eggs.

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### Vegetable Men Plan Year's Meet At Peoria In November

Three out-of-state authorities will be brought to the annual meeting of the Illinois State Vegetable Growers' Association and the Central Illinois Horticultural Society at Peoria, November 18, 19 and 20, to give Illinois gardeners and fruit growers the latest information on some of their major problems, it is announced by Lee A. Somers, vegetable gardening extension specialist of the College of Agriculture, University of Illinois. He is assisting in the program arrangements.

C. H. Nissley, extension professor of vegetable gardening at the New Jersey state university, New Brunswick, will speak on "Small Plant Houses" and "Marketing of Vegetables"; Ward Bailey, of Schoolcraft, Mich., who raises about 20 acres of potatoes under irrigation each year, will speak on "Growing Potatoes," and F. C. Gaylord, vegetable extension specialist of Purdue University, West Lafayette, Ind., will discuss current questions in the marketing of vegetables.

Another feature of the meeting will be a half-day session for women with Miss Mary Wright, home adviser of Radio Station W L S, Chicago, and Miss Harriet T. Barto, of the home economics department, College of Agriculture, University of Illinois, as the principal speakers.

A contest to pick a state champion in the bunching and tying of vegetables will be one of the final events of the program. There will be separate contests for men and women and then a final championship test between the winners from these two divisions. Women have served notice that they are to be strong contenders for the state title with one entrant who already has bunched and tied a dozen bunches of carrots in three minutes.

Other speakers beside the three out-of-state authorities who will appear on the program are C. R. Haize, secretary of Cooperative Consumers' Councils, Chicago, who will speak on "What Are Consumers' Councils?"; Prof. J. B. Tillotson, Bradley Polytechnic Institute, Peoria, "Salesmanship as Applied to Vegetables"; C. C. Compton, assistant entomologist of the Illinois State Natural History Survey, "Soil Sterilization," and Reinhard Boehle, Chillicothe, "Growing Lima Beans."

Members of the horticultural department staff from the College of Agriculture, University of Illinois who will be on the program are Dr. A. S. Colby, chief in small fruit culture, "Growing of Small Fruits"; V. W. Kelley, horticultural extension specialist, "Outlook for Peaches and Apples," and Somers, "Growing of Asparagus."

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### New Record Set With 28,276 Enrolled In 4-H Club Work

A new state record has been set with an enrollment of 28,276 Illinois farm boys and girls in 4-H club projects for this year, report E. I. Pilchard and Miss Mary A. McKee, extension specialists in junior club work, College of Agriculture, University of Illinois. The 1936 enrollment represents an increase of 1,891 over last year, when the total was 26,385. Agricultural projects account for 15,361 of the 1936 enrollment, while home economics projects attracted 12,915.

In each of the 102 counties of the state these farm youngsters between the ages of 10 and 20 years have been learning approved methods of crop and livestock production and better homemaking practices under the supervision of the extension service of the agricultural college and local farm and home advisers with the cooperation of local club leaders.

In the agricultural projects 15,361 farm youth are enrolled, with pig clubs proving the most popular, attracting 4,565. In the strictly home economics projects, clothing proved the most popular, attracting 9,806.

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## Improved Storage Will Help Stretch Short Corn Crop

With a corn harvest of 206,618,000 bushels, 35 per cent less than last year and 39 per cent less than the five-year average, Illinois farmers are taking steps to maintain the quality of the crop and to prevent spoilage losses by proper methods of handling and storage, according to the College of Agriculture, University of Illinois.

Over a 14-year period only about 47 per cent of the corn received at inspection points in Illinois was in the upper three grades, it is pointed out. However, studies have shown that by proper handling and storage, farmers in many cases are able to improve the quality of their corn enough to get it into the upper grades and thereby increase their income as much as \$270 a year on a 3,000 bushel crop.

Moisture is the most important cause of low grade corn, the college authorities say. Percentage of moisture in corn when it is harvested or marketed in a wet condition acts directly to reduce its grade and also encourages the development of molds and rots.

Farmers have found that first class cribs, or farm elevators, which protect the crop from moisture and rodents soon pay for themselves in increased profits from higher grade corn. Others, who market the corn by feeding it to cattle and hogs, save feed-lot labor by having movable, temporary cribs. They have found that they also save feed if these temporary cribs have good floors and roofs.

"Our grandfathers took care to see that their fence-rail temporary cribs had good floors and were well covered with boards, poles, straw or fodder," George H. Dungan, of the college's crop production section, said. "Saving several bushels of corn from moisture, mold and rodent damage meant more to them, since the man hours necessary to produce a bushel of corn were high in those days. Each bushel lost meant a lot of labor thrown away."

Proper ventilation in stored corn can not be over-emphasized, it is pointed out. Many successful farmers, when the moisture content of corn is high, make use of a central A-frame ventilating shaft in cribs eight feet or more in width. Even poles or old rails extending through a crib have been found to aid in drying the corn.

Information about blueprint plans for cribs and elevators and suggestions on corn storage may be obtained by writing the College of Agriculture, University of Illinois.

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## Careful Plan Prevents Costly Errors In Farm Wiring

Illinois farmers whose places have been served by electricity in the rapid extension of rural electrification within the past year have learned the value of giving some advance thought to wiring the farmstead, says R. R. Parks, extension specialist in agricultural engineering, College of Agriculture, University of Illinois.

"By giving careful consideration to the wiring plan of each building in advance, owners may avoid costly changes and additions after the power has been turned on," Parks explained. "The value of any wiring system depends upon its adequacy, economy, safety and convenience."

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### Dairy Rations Can Be Revised To Meet Feed Situation

Faced with the necessity of stretching limited feed supplies over the winter period, successful Illinois dairymen are adopting the policy of determining in advance the amount of roughage and grain available and adjusting their rations to fit their supplies, according to C. S. Rhode, dairy extension specialist, College of Agriculture, University of Illinois.

Those who have plenty of silage and a short hay supply plan to feed heavy on silage, lighter on hay and balance the grain mixture accordingly. Likewise those who have ample oats and limited corn supplies are planning suitable grain mixtures.

"After the feed requirements for the winter have been figured and the available supply known, it is an easy matter to determine the amount and kind of purchased feed needed," Rhode said. "Those who follow such procedure usually feed good rations at the lowest cost and find radical, expensive changes unnecessary."

If it becomes necessary that feeds be purchased, Rhode advises a thought be given to their relative value so far as protein and total digestible nutrient content is concerned.

In listing the approximate value of corn substitutes, he stated that with corn selling at \$1.05 a bushel, the value of one bushel of barley as a substitute would be 89 cents; a bushel of oats, 53 cents; a bushel of wheat, \$1.13; a bushel of rye, \$1.05; one hundred pounds of cane molasses, \$1.48 and 100 pounds of hominy feed, \$2.09.

Rhode anticipates that more farmers than ever will feed according to production this winter. He explained feeding according to production as feeding Holsteins and Brown Swiss one pound of grain to each four to four and one-half pounds of milk produced daily, feeding Guernseys one pound of grain to each three to three and one-half pounds of milk and feeding Jerseys one pound of grain to each two and one-half to three pounds of milk.

The grain mixture can be balanced to fit the available roughage, he indicated. Cows producing only small amounts of milk and dry cows will usually do well on plenty of good roughage alone.

"Regardless of the available feed supply, it will take a good cow to make a satisfactory net return under present price relationships," Rhode said. "It therefore seems poor policy to put expensive feeds into low producing dairy cows. Through dairy herd improvement associations, records were kept on 19,836 Illinois dairy cows last month, enabling the herd owners to weed out the low producers and showing which cows needed better feed and better care."

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### High Feed Prices Stimulate Horse Parasite Campaign

High feed prices this winter will sound the death knell of bots, roundworms and other horse parasites, Dr. Robert Graham, chief in animal pathology and hygiene, College of Agriculture, University of Illinois, believes.

Since horses kept free of parasites require less feed, work better and are thriftier, Dr. Graham anticipates that increasing numbers of Illinois farmers will band together this winter in local campaigns for the eradication of parasites.

Organized campaigns were conducted in 65 counties last year, and treatment of 21,000 horses and mules was reported. This number represents less than 50 per cent of the animals actually treated, Dr. Graham believes.

He estimates that since 1930 more than 500,000 horses and mules have been treated to control parasites which cost Illinois farmers approximately \$100,000 annually in lost horse power. In some counties as high as 75 per cent of the horse and mule population has been treated.

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### Special Diets Can Utilize Soybeans Instead Of Wheat

"Hayfever" isn't always hayfever, thereby leaving the way open for soybeans to add to their already fast growing usefulness, according to home economics workers of the College of Agriculture, University of Illinois.

Sometimes the sneezing and the snuffles, the roughening or swelling of the skin, may be caused not by hayfever but by sensitiveness to certain foods.

Simple tests by a physician will show which food is at fault. When wheat is causing the "food allergy," as it is named, a substitute must be found for wheat flour in making pies, breads and cookies, and even in thickening for gravies and sauces.

Then it is that soybeans, in the form of soybean meal and soybean flour, find a new use, it was demonstrated in the laboratories of the home economics department at the University of Illinois.

"Persons who are allergic or sensitive to wheat or milk or eggs have found soybeans to be protein-rich foods which they can usually tolerate well," says Miss Sybil Woodruff, professor of foods, of the home economics department, U. of I., College of Agriculture. "A milk can be made from ground dry soybeans somewhat resembling cow's milk. It is prepared by extracting ground beans with water and is rich in protein."

Delicious muffins, pie crust and cookies are only a few of the dishes in which soybean flour or soybean meal can be used to take the place of wheat flour, home economists find. However, soybean flour contains no gluten, the sticky substance which causes wheat flour products to hold together. Baked products made wholly with soybean flour are therefore somewhat different in texture from the ordinary wheat flour ones. Used as thickening in croquettes, meat or fish loaf, or even for breading meats, soybean products give a pleasing, nutlike flavor, says Miss Woodruff.

Soybeans have an important place, also, in the regular diet, where there is no food sensitiveness. Illinois farm homemakers are using dry soybeans more and more in soups, souffles and baked dishes, just as they use navy or lima beans.

Compared with peas and beans, soybeans are rich in fat, high in the bone-building minerals, calcium and phosphorus, twice as valuable a source for protein and noted for their iron content. Moreover they are thought to be rich sources of vitamins A, B, and G.

Assisting the housewife in determining which variety of bean gives the best color and flavor and is the most economical to use, are food research workers in the Illinois home economics laboratories who are testing 300 varieties of beans this winter, Miss Woodruff explains. Field varieties which have been found favorable for home use are the Illini, Mansoy, Manchu and Easycook. However, new types strictly for vegetable use are being sought through the research.

Recipes which have been worked out and tested by the Illinois home economists are now available in a bulletin called "Ways of Using Soybeans as Food." It may be obtained by writing the College of Agriculture, University of Illinois.

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### Illinois Milk Cooperatives Plan for St. Paul Meet

Members of Illinois cooperative milk producers' associations will be represented among the 2,000 delegates and guests who will assemble at St. Paul, Minn., November 9, 10 and 11, for the 20th annual convention of the National Cooperative Milk Producers' Federation. An announcement of the program of the annual session of this, the oldest and largest commodity federation of cooperatives in the nation, has just been received by the College of Agriculture, University of Illinois.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
Experiment Station, and Extension Service

Volume XIX

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Number 45

## Contour Farming Conserves Moisture, Soil And Power

Since it is easier to pull machinery on the level than to pull it up and down grades all day, contour farming saves fuel and power as well as soil.

So says C. D. Goeke, Dakota, Stephenson county, in a report to F. A. Fisher, State coordinator, Soil Conservation Service. Contour farming is one method of preventing erosion which authorities of the College of Agriculture, University of Illinois, estimate to be serious on more than 18 million acres of Illinois land.

"What is more important during drouth years, contour farming saves moisture, too," Goeke said. "After a heavy rain it is easy to see where the rows have been standing level full of water all of which seeped into the soil where it fell. Seldom if ever does any water get over into the next row.

"We practice both contour and strip farming, and in those exceptional cases where contour work will not hold all the water that falls, the strip of grain or alfalfa catches and holds surplus water and the soil it is attempting to carry away.

"Plowing, planting or cultivating corn on the contour may be a little more difficult in the beginning, but after a half day's work, the difficulty vanishes as experience is gained," he pointed out. "Plowing may take a little longer, but a better job is done when the plows are on the level than when they lean one way going up grade and another going down."

Goeke prefers tractor cultivation to horses and has no trouble following the rows closely. He uses a two-row plow.

His fields are level to gently rolling with just enough decline for sheet erosion to be serious unless contour farming is practiced. Contour farming is nothing more than farming on the level, he said.

After cooperating with the Soil Conservation Service in the construction of terraces, outlets, concrete dams and brush checks on his McLean county farm, G. E. Holder, Bloomington, says that he is convinced that with ordinary care and crop control erosion will be permanently arrested on the farm, making it profitable to build up soil fertility.

The location and construction of terraces is described in a new circular, No. 459, "Terraces to Save the Soil," which may be obtained by writing the College of Agriculture, University of Illinois.

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## Dairy Industry To Honor Those With 50-Year Record

Reflecting the growing demand among Illinois consumers for cheese, an entire day's discussion will be devoted to the manufacture of cheese as dairy manufacturers from all sections of the middle west gather at the College of Agriculture, University of Illinois, November 11 to 14, for the annual Dairy Manufacturers Conference.

Other problems to be considered in the four-day meeting relate to the marketing of milk and the manufacture of ice cream and butter, according to H. A. Ruehe, head of the dairy department of the college.

A feature of the conference will be a golden jubilee banquet in honor of those who have been connected with the dairy industry for 50 years or more.

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### Soybean Harvest Is Rushed To Avoid Adverse Weather

Illinois soybean fields are full of combines these days as farmers push the harvest of an estimated crop of  $17\frac{1}{2}$  million beans in an effort to avoid such adverse weather conditions as last November's rains. Continued wet weather boosts harvesting costs.

Average acre costs of harvesting soybeans with combines last year ranged from 94 cents to \$1.51, reports Illinois Farm Economics, a monthly circular issued by the department of agricultural economics, College of Agriculture, University of Illinois.

The report is based on a study covering a total of 83 machines harvesting 35,731 acres of grain, of which almost 75 per cent was soybeans. Thirteen of the machines were of the power-take-off type with cutting widths of five, eight and ten feet. Seventy machines were of the motor-mounted type with cutting widths of eight, nine, ten, twelve, sixteen and twenty feet.

With the power-take-off machines, the average cost an acre of harvesting soybeans was \$1.37 for those machines having five-foot cutting widths, \$1.25 for eight-foot machines and \$1.49 for ten-foot machines.

For the motor-mounted type, those having eight-foot cutting widths had an acre harvesting cost of \$1.42. Harvesting cost of the ten-foot width was \$1.51, for the 12-foot \$1.40 and for the machines with a 16-foot cutting width the acre harvesting cost was only 94 cents.

Average operating and overhead expenses for the season on power-take-off machines was \$220.85 for the five-foot size, \$331.03 for the eight-foot size and \$538.03 for the ten-foot size. Average costs of operating motor-mounted machines for the season were \$592.06 for the eight-foot size, \$548.95 for the ten-foot size, \$602.59 for the 12-foot size and \$839.84 for the 16-foot size.

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### Grasshoppers Are Indirect Menace To Poultry Flocks

Warnings of a possible heavy infestation of grasshoppers in 1937 hold a menace to Illinois poultry flocks as well as to field crops.

Grasshoppers have been found to be the intermediate host for at least three poultry parasites, chief of which are tapeworms and round worms, says J. D. Mizelle, assistant parasitologist in the animal pathology division of the College of Agriculture, University of Illinois.

"Poultry losses cost Illinois farmers approximately \$4,000,000 annually," Mizelle estimates. "And 20 per cent of the annual poultry mortality, as judged by autopsy findings, is caused by tapeworms which spend a part of their life cycle in such intermediate hosts as grasshoppers, houseflies, stableflies, dung beetles, ground beetles, earthworms, snails, slugs, ants and crustacea."

It has also been found that poultry become infested with roundworm parasites by eating grasshoppers, earthworms, cockroaches, snails, bill bugs, waterfleas and dung beetles. However, few parasites are able to develop directly without spending a part of their life within an intermediate host.

While proper sanitary measures will not prevent the grasshopper menace, good poultry management will go far toward the control of parasites with both direct and indirect life histories, Mizelle pointed out.

"Poultry owners will find that it pays to have clean, well constructed houses and equipment, clean yards and ranges, clean, well balanced feed and water," he said. "It is also important to dispose of diseased fowls and see that houses, troughs and watering utensils are kept clean. These measures combined with any other steps that will destroy intermediate hosts or prevent their access to farm flocks will cut down the heavy annual poultry loss and raise egg and meat production."

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### Knowing Markets Is Essential To Livestock Profits

To help counteract high feed prices and short feed supplies caused by the drouth, Illinois farmers who plan to obtain the best possible returns from their winter feeding operations are learning their markets and their livestock, says R. C. Ashby, professor of livestock marketing, College of Agriculture, University of Illinois.

"Knowing markets involves more than listening to radio market reports while eating dinner," Ashby said. "A sound background of market information is essential to making the most out of the livestock feeding business."

As a supplement to radio market reports, Ashby has listed a number of pointers for developing an understanding of markets.

The federal Bureau of Agricultural Economics will send its daily mimeographed market reports to any farmer who wants them. These reports which arrive a day late may be checked back against the radio report for that particular market and checked against the weekly summary which is also sent out by the bureau.

It is also advisable, Ashby said, to visit the markets as often as possible and maintain an acquaintance with responsible market operators. Visits to the markets will also enable one to watch how various kinds of livestock are sorted and graded and to check the prices paid for the various grades and weights. Valuable experience is also obtained by attending the market tours conducted by cooperative terminal sales agencies. And finally, Ashby recommends reading a good livestock market paper.

"After learning the markets, it is necessary to know livestock," Ashby explained. "Knowing livestock in this case means being able to see the stock as it looks to competent buyers and sellers on the markets. It means understanding market classes and grades well enough to picture the livestock referred to in the market reports."

"By following these two rules, knowing markets and knowing livestock, it is possible to develop the ability to anticipate market changes, the most difficult job in judging markets."

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### New Marks Set In 26 Illinois Horse Pulling Contests

Four new state records were set in Illinois this year as 62,300 people saw 309 pairs of horses and mules compete in 26 horse pulling contests, according to E. T. Robbins, livestock extension specialist, College of Agriculture, University of Illinois, who supervises all official contests held in this state.

New records were established in the number of people witnessing contests, the number of teams competing, the number of contests, and a team belonging to Cedardell Farms, Plano, set a new state pulling record in the heavy weight class.

The new state record in the heavy class was made at Henry, September 8, when the Cedardell Farm roan geldings weighing 4,065 pounds lifted 3,600 pounds and pulled it the required distance of 27½ feet. This is equivalent to starting for 15 or 20 times on pavement a wagon load of 46,700 pounds, or more than 23 tons. It is equivalent to pulling eight 14-inch plows turning furrows six inches deep in stubble ground.

The state record in the light weight class has stood since September 17, 1932, when it was established at Tuscola by a pair of geldings belonging to Willard Rhoads, Springfield. The Rhoads team, weighing 2,920 pounds, lifted 2,825 pounds and pulled it 27½ feet. This is equivalent to starting several times in succession on a pavement a wagon load of 36,000 pounds or 18 tons.

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# The Extension Messenger

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## Terraces Now Protect 10,700 Acres Of Sloping Land

More than 715 miles of terraces protecting approximately 10,700 acres of sloping land against erosion have been constructed in 37 counties during the past two years by Illinois farmers cooperating with the U. S. Soil Conservation Service and the extension service of the College of Agriculture, University of Illinois.

In making this report, F. A. Fisher, state coordinator of the Soil Conservation Service, points out that terraces were built in Pope, McLean, Ford, Henry, Woodford, Coles, Edwards, Jo Daviess, Ogle, Winnebago, Morgan, Peoria, Mercer, Marshall, Carroll, Jersey, Pike, Mason, Fulton, Jackson, Union, Franklin, Monroe, White, Bond, Macon, Schuyler, Greene, Clark, Adams, McDonough, Randolph, Tazewell, Macoupin, Lawrence, Madison and Stephenson counties.

Designed to prevent soil losses, terraces are constructed approximately on the contour with a slight grade. Caught and held behind the terraces, water from rains flows to a prepared outlet where it is carried down the slope in such a manner that its cutting power is reduced to a minimum. By slowing up the speed of run-off water, terraces permit a greater amount of rainfall to be absorbed by the soil for the use of growing plants. Terraces also prevent concentration of large volumes of water in field draws or depressions where serious washing might occur.

"To maintain an effective terrace ridge height, farmers whose fields have been terraced conduct their farming operations across, rather than up and down, the slopes," Fisher continued. "This practice of contour farming also assists in the retention of soil and water."

"In many cases entire terraced fields farmed on the contour are planted to one kind of crop, while in other instances a system of strip cropping is followed. In strip cropping strips of erosion resistant crops such as alfalfa are alternated with horizontal strips of cultivated row crops such as corn. Any soil washing from the cultivated strip is caught and held by the strip of erosion-resisting crop just below it."

"Farmers who operate these 10,700 acres of terraced land are discovering that a combination of strip cropping incorporated with terraces cultivated on the contour provides a much more effective check on erosion than the use of either terraces, contour farming or strip cropping alone."

Construction and maintenance of terraces is described in a new circular, No. 459, "Terraces to Save the Soil," which may be obtained without charge by writing the College of Agriculture, University of Illinois.

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Thurman Wright, former vocational agriculture teacher, Ridgway, has accepted a position as farm adviser in White county, Carmi, it was announced by J. C. Spitler, state leader of farm advisers, College of Agriculture, University of Illinois. Wright started his new duties on November 1. He succeeds R. H. Clanahan who resigned September 30.

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Corn Prices Higher In December Of Short Crop Years

As farmers harvest one of the shortest corn crops on record, estimated at  $1\frac{1}{2}$  billion bushels for the U. S., those Illinois farmers who have watched corn prices for several years remember that prices following very short harvests, instead of taking a typical seasonal course, have commonly been highest in December and January, says the College of Agriculture, University of Illinois.

On the other hand in years of moderately short crops, the movement of prices through the season has been much more nearly normal, with the lowest prices being reached in the late fall or winter months and gradually rising until May or June, it is reported in Illinois Farm Economics, a monthly circular issued by the department of agricultural economics of the college.

"Since 1900 there have been three U.S. corn crops of less than two billion bushels, those of 1901, 1934 and 1936," the circular points out. "In addition to these years of extremely short crops there have been four years, 1913, 1924, 1930 and 1935, when the crop was less than 2.3 billion bushels."

During the current year corn prices have moved more as they did in 1924 than in either of the other years of extremely short crops. In both 1901 and 1934 the rise from May to August was much less than this year. In calling attention to other similarities between 1924 and the current season, Illinois Farm Economics states that prices of hogs and cattle are at approximately the same level as on the corresponding date of 1924 and much above the levels of 1901 and 1934. Business activity has been increasing rapidly in recent months and is approaching normal, as was the case in 1924. In 1901 business activity was above normal and decreasing slowly, and in 1934 it was far below normal.

"However, too great a rise from April to August in a year of an extremely short crop might result in prices during August reaching levels higher than the following December or January, even though the course of prices should otherwise correspond to the experience of other years of extremely short crops," the circular warns.

"This tendency for prices to be higher in December than in August of years of extremely short crops appears to be caused by the influence of small receipts during November and December. Only a small part of the crop is marketed in the form of grain and the reduction in marketings is more than in proportion to the reduction in the crop unless prices are very attractive to corn growers.

"In appraising prospects for the current season it should be noted that while the number of bushels produced is very small, the corn supply is more nearly adequate for the hogs now on hand than was the case in 1901 or 1934. Corn loans or other governmental measures may also affect the course of prices."

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Steady Business Upturn Is Reflected In Farm Income

Steady business improvement in 1936, evidenced in construction, manufacturing, transportation, mining and trade, has been influential in bringing about a continued increase in farm income despite the severe drouth and the resultant low yields of some crops, according to the College of Agriculture, University of Illinois. In pointing out the relationship between business improvement and increased farm income, Illinois Farm Economics, a monthly circular issued by the college, calls attention to the fact that in July of this year factory payrolls, when corrected for changes in the cost of living, averaged 99 per cent of those for 1921-1929, while in the same month the purchasing power of the income of Illinois farmers was 101 per cent of the 1921-1929 average.

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### Plentiful Supply Of Turkeys To Test Skill Of Cooks

Probability that turkey will receive a unanimous vote as the preferred meat for Thanksgiving is seen this year as 20,000,000 birds head for the market. This is the largest crop on record, according to reports from the U. S. Bureau of Agricultural Economics.

With other meat prices in the higher scale bracket and with incomes above those of last year, the turkey is certain to be the center of interest in many meals. How much it will be enjoyed all depends on its preparation and cooking, says Miss Glenma Henderson, extension specialist in foods, College of Agriculture, University of Illinois.

First of all, thorough cleaning is necessary, says Miss Henderson. The family turns "thumbs down" on any pin feathers. Immersing wing tips in boiling water for a few minutes is the easiest way to remove wing tip feathers. A small pair of pliers helps with this task. Pin feathers are removed easily with a strawberry huller. The bird is then singed, washed and wiped thoroughly. Some homemakers prefer to use cold water, while others scrub the poultry with soap and water. Both soap and soda are effective to wash away the surface fat, but thorough rinsing with cold water is required afterwards. Drying the bird thoroughly on the inside prevents the stuffing from becoming soggy.

Trussing forms the bird into a compact mass so that the wings and legs do not dry out during cooking, explains Miss Henderson. The best method is to slip the skin of the neck as far back to the body as possible and cut off the neck close to its base.

The skin is then folded over the back of the bird and fastened. The bird is filled with a favored stuffing and sewed up. The wings are folded so that the tips are close to the body and the ends of the legs are drawn together with a long, strong cord. The same cord is then brought around the tailpiece, crossed over the back, run across the upper tips of the wings, then the lower tips and tied across the back.

As for roasting, Miss Henderson advocates an even moderate temperature of 300 degrees at all times. About 20 to 30 minutes of roasting is allotted to each pound of bird. The turkey is placed on a rack in a flat, uncovered pan. No water is necessary, according to Miss Henderson. If the bird is not quite as brown as desired the oven may be turned up for the last 15 or 20 minutes of baking. Rubbing unsalted fat or oil on the skin will help to give a shiny gloss.

This method applies to a young light turkey; many of which will be on the market this winter owing to short feed situation, says Miss Henderson. She prefers cooking both old and young turkeys with the breast bone down, since this will allow some of the fat to penetrate throughout the bird. However, when old turkeys are roasted the roaster is covered over.

A test for doneness is to thrust a steel skewer into the thigh next to the breast. If the juice is not red, the turkey is done. Use of the low temperature throughout eliminates the need for basting, says Miss Henderson, and also follows out the general rule for cooking all meats.

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### Protein Will Improve Results From Feeding Of Silage

As a means of conserving drouth stunted corn for feed during winter months, the number of trench silos now in use on Illinois farms is more than double the number for any previous year with some counties having from 500 to 1,000 such silos, according to E. T. Robbins, livestock extension specialist, College of Agriculture, University of Illinois.

"One of the problems in using silage concerns the supply of protein so necessary in the livestock ration," Robbins said. "Farmers have found that animals do much better when the silage is balanced with a protein feed."

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## Argentine Corn Not The Threat That Some Claim It Is

The threat of Argentine corn importations to the price Illinois farmers will receive for corn the next few months is greatly exaggerated, in the opinion of J. J. Pieper, professor of crop production, College of Agriculture, University of Illinois.

"First shipment of Argentine corn to reach as far north as Chicago this year arrived there the week of October 25 and consisted of 83,000 bushels," Pieper explained. "The cost of delivering the corn, including a tariff of 25 cents a bushel amounted to \$1.01. With these costs the price of corn will have to increase considerably before the Argentine farmers will have much left for a profit.

"Nearly all corn imported this year has been confined largely to Pacific coast and gulf ports. The price of Argentine corn is competitive with corn shipped from the corn belt to these deficit regions. However, with the present differential in price between Argentine corn and corn belt corn, little if any Argentine corn will reach the feed lots of Illinois.

"Since 1919 the first Argentine corn to come into Illinois before this year was in 1934."

Records show that the first time corn imports into the United States reached as much as one million bushels was in 1913 when 12,000,000 bushels were imported. From 1913 to 1920, inclusive, imports ranged from two to twelve million bushels. Since 1920 imports exceeded one million bushels in 1924, 1926, 1927, 1930, 1934, and 1935.

Comparisons between the size of imports and the quantity of corn produced in the United States show that for the five-year period 1924 to 1929 imports amounted to 3.5 per cent of the domestic production, and for the next five year period, 1930 to 1934, imports averaged 3.4 per cent of production in this country. Last year they averaged 4.8 per cent. Early indications point to an average of slightly more than 3.5 per cent for this year.

While Pieper is not alarmed by the threat of Argentine corn to Illinois corn prices, he stated that the Argentine has more corn available for export than at any time in the past three years.

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## Calhoun Farmers Save Thousands On Spray Materials

Calhoun county apple growers are counting their savings this fall as a result of having followed the advice of W. P. Flint, chief entomologist, College of Agriculture, University of Illinois and Illinois State Natural History Survey.

Early last spring San Jose scale was discovered in several orchards, according to Farm Adviser J. H. Allison, in his report to the agricultural college. Fearing that the scale might be extensive, he sent about 30 sample twigs to Flint for his advice.

Since the number of live scale found did not warrant the expense of spraying, Flint recommended that if spraying be done at all it be confined to the lower body of the tree. This fall, Flint's recommendations have been proved accurate, Allison reports. Fruit growers of the county were saved thousands of dollars which would have been spent for dormant spray material.

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Value Of Illinois Farm 99 Per Cent Above U. S. Average

Average acre valuations of Illinois farm real estate is 50 per cent lower than during the period 1900 to 1920 when expressed in terms of the national average, according to Illinois Farm Economics, a monthly circular issued by the department of agricultural economics, College of Agriculture, University of Illinois.

However, the average Illinois farm was valued last year at 99 per cent above the average farm in the nation.

Standing between 220 and 225 per cent of the national average in 1930 and 1935, valuations an acre in Illinois were between 270 and 275 per cent in 1900 to 1920. State average valuations amounted to 75 per cent of the national average in 1850.

The 85-year span of farm value history has witnessed a number of changes in the relative standings of districts within the state, the circular points out. Southern Illinois districts, Carbondale and Harrisburg, attained their highest relative valuations at an early date, in 1850 and 1860, and their lowest relative valuations in 1930 and 1935, thus showing persistent downward trends in ratios.

Bloomington and Chicago districts attained their lowest valuations in 1850 and their highest in 1920 and 1925. Counties in the southern part of the state reached their lowest relative valuation in 1925 or 1930, while counties along the Illinois river and in the southwest central part of the state reached their lowest relative valuations in 1935.

Between 1925 and 1935 the valuation of land and buildings an acre in the southern, northeast, west central and northwest sections of the state were fairly stable in relation to the state average. However, prior to 1920, in the period of most rapid upward movement of real estate values, differences between areas widened markedly, and in periods of falling real estate prices, differences were shrinking.

Districts in which commercial farming has been most emphasized have shown the greatest changes, both upward and downward, the circular explains. Commercial opportunities have had fluctuating significance and have caused real estate values to react to their tendencies to ebb and flow.

Valued at 2 1/5 billion dollars, Illinois farm real estate last year represented 6.7 per cent of the national total of 33 billions. This proportion is the lowest of any census period as far back as 1870, at which time the area of farm land in the state had reached its present total. In 1900 the value of Illinois farm real estate was 10.6 per cent of the value of all land in the nation, the highest proportion in the 65 years since 1870.

The average valuation a farm in Illinois in 1870 was \$3,631, which was 30 per cent above the average valuation of all farms in the nation. In 1920 the average Illinois farm had a value of \$25,289, which was 146 per cent above the nation's average. Last year the average farm in the state was listed at \$9,536, which is still 99 per cent above the national average. The acre valuations in these three periods were \$28.45, \$187.59 and \$69.67, respectively.

Between 1920 and 1935 the average Illinois farm suffered an average decrease of \$1,050, or based upon the 1920 figure, a decline of 4 per cent for each of the 15 years.

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Illinois leads other states in farmers' associations marketing grain, according to the Farm Credit Administration. During the season 1934-35 the 419 farmers' elevators in Illinois with 72,00 members did a business of \$52,000,000.

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### Illinois Factory Payrolls Are Up 18% Over Last Year

Major upward movements in factory payrolls are reflected in Illinois cities as well as in other larger cities in the United States, according to Illinois Farm Economics, a monthly circular issued by the department of agricultural economics, College of Agriculture, University of Illinois.

Payrolls in Illinois for the first eight months of 1936 were 18 per cent higher than for the same period a year ago and nearly twice the average for 1932, it is pointed out. During the past year Illinois payrolls have increased more rapidly than those for the country as a whole. However, they are still considerably lower, relative to the base period 1925-27, than those for the United States.

In eight cities, Peoria, Rockford, Bloomington, Aurora, Springfield, Moline, East St. Louis and Decatur, factory payrolls have increased more rapidly than those for the state as a whole. The greatest increase for the past year took place in Peoria, it is stated in the circular.

For the first eight months of 1936, Peoria payrolls averaged 2.5 times greater than those for 1925-27 and more than three times the average for 1932. In October, last year, the circular reported that Peoria payrolls were the highest of any city in the United States for which payroll data are available. However, despite the high level reached last year, Peoria payrolls during the first eight months of this year were nearly double those for the same period last year.

Improvement in business activity in Peoria in 1936 has been caused principally by increased purchases of farm machinery and tractors. There has also been continued activity in the beverage industry, according to Illinois Farm Economics.

Rockford payrolls this year are 67 per cent higher than a year ago and about three times those for 1932. The expansion of business in Rockford can be attributed principally to renewed activity in the metal industry, including the manufacture of business machines, and to increased furniture sales.

Payrolls in Rock Island, Chicago, Danville, Joliet and Quincy were lower in 1936 than the state average. Chicago payrolls have increased much more rapidly than those in New York, although Chicago payrolls in 1932 had fallen to a much lower level. In 1936 they were 60 per cent higher than in 1932, while those in New York had increased only 10 per cent.

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### Five Men Spread 70-Ton Carload Of Limestone In Day

When five men and a truck can unload and spread a 70-ton carload of limestone a day, much of the back-ache has been removed from the task of sweetening acid soil for the growing of legumes, says L. B. Miller, associate in soil experiment fields, College of Agriculture, University of Illinois.

Using equipment devised by D. E. Mullen, Tolono, Champaign county, five men on three consecutive days were able to unload a 70-ton carload of limestone a day, haul it two and a half miles and spread it on the field, according to Miller.

The truck had a power dump body which helped greatly in getting the stone into the trailer type spreader. Ten to twelve minutes were required to distribute a five-ton load on the field at the rate of two and a half tons an acre.

While the truck with its driver and two shovelers were hauling and spreading the limestone, two other shovelers were loading a hopper from the car at the railroad siding. The hopper was equipped with a simple trap door which quickly and easily delivered a five-ton load of limestone into the truck. The hopper was mounted on skids and could easily be pulled into position by the truck.

Mullen made use of the equipment to distribute 500 tons of limestone this summer on 200 acres of land in Champaign county.

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## First Outbreaks Of Stalk Disease In Horses Reported

The season's first cases of the so-called cornstalk disease of horses, which in 1934 killed a half million dollars' worth of animals in Illinois, have just been reported from different sections of the state, according to a warning issued today by Dr. Robert Graham, chief in animal pathology and hygiene at the College of Agriculture, University of Illinois. Farmers should go on guard immediately to prevent a repetition of previous losses, he warned.

The safest procedure is to keep horses off stalk fields altogether and to avoid the feeding of damaged, worm-eaten corn. If horses must be grazed on stalk fields, they should be given some other feed beside what they can pick up in the field, he recommended. If damaged corn must be fed, some of the risk can be eliminated if the grain is carefully selected.

Horses can be saved in the early stages of the malady if the local veterinarian is consulted at the first sign of the disease. There is no known successful treatment in the later stages of the trouble. Neither is the specific cause of the disease known nor is there any way to tell when a stalk field is dangerous.

The first two cases of the disease to be definitely reported this season occurred in Champaign county. One was so serious that the horse died. There have been unconfirmed reports of the disease in other sections of the state.

There have also been reports that in some cases cattle are afflicted with the disease, thus adding a new threat to any outbreaks of the disease that may occur from now on.

Stock has been spared longer than had been expected this fall, for in 1934 the disease started taking its toll the latter part of September and continued through the winter until the first of April. Approximately 5,000 died in the outbreak. The first warnings for farmers to be on the lookout for the disease this fall were issued by the college in August.

The disease seems to be brought on by dry summers which are followed by heavy fall rains, resulting in widespread damage to the corn crop.

First symptoms of the disease are sluggishness, an excited condition or blind staggers. Prompt treatment of the disease in the early stages has given good results, but no curative or preventive measures have been found.

Systematic studies of the disease have been under way at the agricultural college ever since the serious outbreak two years ago.

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A poultry short course will be held at the College of Agriculture, University of Illinois during Farm and Home Week, January 11 to 15.

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Rural Talent Starts Rehearsals For State Meeting

First step in preparations for the 1937 Illinois rural music and drama tournament to be held at the University of Illinois College of Agriculture, in connection with Farm and Home Week, January 11 to 15, will be taken November 30 with the completion of a series of ten district meetings of farm and home advisers, county chairmen and rating judges.

Delegates at these meetings will represent each county in the state, according to E. H. Regnier, associate in rural sociology extension, who is in charge.

Details for district tryouts are arranged at the preliminary district meetings which have been held at Pontiac, Yorkville, Mt. Carroll, Moline, Winchester, Effingham, Lincoln, Sparta and Golconda. A meeting has also been scheduled at Sullivan, November 30.

As a preliminary to the state music and drama tournament, county tryouts are first held to select the one-act play group, men's quartet, mixed quartet, women's trio and orchestra worthy of appearing in the district tryouts, according to Regnier.

From the ten district tryouts four of the most outstanding one-act play groups, quartets, trios and orchestras are selected from over the state to compete in the state tournament. In the county and district tryouts, the units do not compete against each other, but are rated according to the merits of their performance. Farm and home advisers report that county tryouts have already been held in some counties.

Last year the Winchester Women's Club, of Scott county, won the one-act play contest, the Lanark community of Carroll county took home state honors on its men's quartet, the Forest City home bureau unit from Mason county won the mixed quartet competition, the Effingham ladies' quartet of Effingham county was awarded top honors in the women's quartet contest and the Long Point community of Livingston county ranked first in orchestra competition.

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Seed-Corn Loan Plan Probably Not Needed In Illinois

As harvest of the 1936 corn crop progresses and drouth states find more corn suitable for seed than was at first anticipated, it is probable that the emergency federal seed-corn loan will not be necessary in Illinois this fall, according to J. C. Hackleman, crops extension specialist, College of Agriculture, University of Illinois.

The seed-corn loan program was designed to assure farmers in drouth and grasshopper stricken areas that adequate supplies of corn will be available for planting next spring. Developments in Missouri, Nebraska and Kansas indicate that those states will have to import much smaller quantities of seed-corn than they thought.

However, it is possible, Hackleman says, that some farmers in drouth areas may be in the market for Krug or Reid Yellow Dent from northern and north central Illinois. Ample supplies of seed are available in parts of Missouri.

To facilitate the movement of seed corn to drouth areas where it is in demand, Hackleman is compiling a list of Illinois farmers who have good seed which has been carefully handled.

While awaiting definite action on the seed-corn loan program, farmers having good seed should cull out the bad corn and protect the good ears from freezing for the next two or three months, Hackleman suggested. After it is thoroughly dry, containing approximately 12 to 15 per cent moisture, it may be sold as ear corn if no market exists in the deficit areas.

Hackleman advises that seed-corn be placed on racks or spread out thinly over wire or slatted floor.

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### Feed Supplies Ample For Maintaining Breeding Stock

Present supplies of feed and forage in Illinois indicate that farmers in the state should be able to get through the winter without having to sacrifice breeding animals because of feed shortages, according to E. T. Robbins, livestock extension specialist, College of Agriculture, University of Illinois.

"Although the supply of grain is smaller this season, it amounts to fully as much for each animal as the small supply of 1934," he said. "The supply of roughage is likewise smaller than usual, but probably 20 per cent larger for each hay-consuming animal than the small supply of 1934."

As in other years of scarce and high priced feed, farmers with livestock to fatten are interested in feeds which might replace the staple ones produced on the farm. However, experience has shown that even in years when it is high priced, corn is usually the best and most economical basis for any fattening ration. Corn is higher in digestible nutrients than any feed which might be used to replace it.

For this reason livestock feeding authorities at the agricultural college recommend that any feed purchased to replace corn be bought for less than the price of corn a pound.

Comparative feeding values a bushel for general feeding as listed by the agricultural college authorities are: corn \$1, wheat \$1, rye 80 cents, barley 70 cents and oats 50 cents. It is explained that this allows for extra cost for grinding the small grain when necessary and allows for variation in pork production by hogs following cattle.

Some mill feeds are listed as suitable to replace dollar corn, such as middlings at \$40 a ton and bran at \$36. It is pointed out that any substitution requires consideration of the suitability of the feeds for the kind of livestock.

In some localities molasses is reported to be cheap compared with corn. With corn at \$1 a bushel, a comparable cost of molasses would be \$30 a ton, agricultural college authorities explain. They point out that molasses can be used to replace only part of the corn.

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### Electrified Farms To Get The Best Tenants In Future

With the continued extension of rural electrification in Illinois, land owners of the future will find the better class of tenants selecting those farms equipped for electric service.

That is the prediction of E. W. Lehmann, head of the department of agricultural engineering, College of Agriculture, University of Illinois.

Furthermore, he believes that many farmers will find that by equipping their farms for electricity, they will realize a high interest on their investment because of improved working conditions and improved efficiency on the farm.

Rural electrification is spreading at such a rapid rate throughout the nation that it is anticipated there will be 1,000,000 highline-electrified farms in the country by the beginning of 1937. From January to June of this year, 71,243 farms were given electric service, bringing the total to 860,000.

In Illinois during the first seven months of this year 1,951 miles of rural line construction has been authorized, as compared with 118 miles in 1935 and a mere two miles the year before.

The extension service of the agricultural college is cooperating with other interested agencies in fostering the extension of electric service to more Illinois farms. A circular on farm wiring for electricity may be obtained by writing the college at Urbana.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

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## Cattle Wintered On Silage Need Additional Protein

With more silage in Illinois this year than ever before, the animal husbandry department of the College of Agriculture, University of Illinois points out that cattle or sheep living principally upon silage need some additional protein.

For cattle one pound a day of such feed as cottonseed meal has proved satisfactory. If the cattle are to be fattened, twice as much of the protein feed may be used along with some additional grain.

Silage is suitable for any cattle and any sheep or lambs. Hogs do not care much for it except for the corn it may contain. There is danger of killing horses because of damaged silage which may be fed to them.

Grinding roughage does not pay, it has been found by farmers and by tests made by the agricultural college. One Illinois cattlefeeder who had been enthusiastic about grinding shock corn has now put up two silos and dug one 150-foot trench silo and filled them all. Tests show that the net income an acre from ground shock corn is less than the income from shock corn fed whole, while both of these give less net income than silage.

Animals getting stalk fields, shocked corn, husked corn fodder or straw also need additional protein. A good plan is to feed them a small amount of legume hay each evening.

Realizing that with high priced feed, farmers will desire to fatten cattle by substituting low-priced feed wherever possible, the agricultural college authorities say that grain rations for fattening cattle may be cheapened in some localities by substituting some oats or wheat for part of the corn if prices are favorable. A ration of one-third corn, one-third oats and one-third wheat has been found satisfactory.

Ground ear corn does very well for fattening cattle during the early part of the feeding period, but gains are faster and fat is put on more rapidly if the cobs are discarded and some oats are used to supply additional bulk to the ration.

Common-to-medium cattle which are being fattened for the spring market need very little grain in addition to silage, legume hay and high protein feed until they are about half fat. Corn or other grain suitably balanced with protein feed during the last 60 days adds much to the finish and selling price.

Choice cattle and calves may gain flesh with comparatively little grain until they are about half fat, but they need several months of full feeding on a suitably balanced grain ration to make them really fat.

In general a mixture of one part of such a feed as soybean oil meal to seven to nine parts of corn for calves or nine to 12 parts of corn for older cattle makes a suitably balanced ration especially if some legume hay is fed.

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## Truck Spreaders Boost Limestone Use On Acid Land

Introduction of a limestone hauling and spreading service by the Richland County Farm Bureau was instrumental in farmers of the county using more than 100 cars of limestone this year, according to reports received by C. M. Linsley, soils extension specialist, College of Agriculture, University of Illinois.

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### Forward Step Is Marked In Dairy Cattle Breeding

A forward step in the improvement of the 1,153,000 milk cows on Illinois farms is marked with the establishment of a system for recording the identity and production performance of all cows being tested in dairy herd improvement associations throughout the United States, according to C. S. Rhode, extension specialist in dairying, College of Agriculture, University of Illinois.

Records will be kept on a uniform basis in the files of the bureau of dairy industry of the U. S. Department of Agriculture which is cooperating with the extension service of the agricultural colleges in the program.

"With such information readily available individual animals, both male and female, that possess and transmit an inheritance for high producing capacity may be identified and located and their influence perpetuated and disseminated," Rhode said.

"While herd improvement through breeding has become an important part of the program of dairy herd improvement associations, these breeding programs are no longer confined to herds or associations within a state. Family lines of dairy cattle may extend to herds widely scattered in different associations or different states."

One of the advantages of the new nation-wide recording system is that all sires for which a sufficient number of dam and daughter comparisons are available will be proved at the earliest possible date.

Most of the responsibility and work connected with the program is left with the association tester, Rhode pointed out. Data reported by the tester to the dairy department of the agricultural college will be forwarded to the bureau of dairy industry.

A program of determining the individual efficiency of dairy cows was started in Illinois in 1901 by W. J. Fraser, professor of dairy farming, of the University of Illinois College of Agriculture. This is said to have been the beginning of such work in the United States. For more than a quarter of a century, the work of dairy herd improvement associations in the state has been sponsored by the extension service of the agricultural college. The present system of recording coordinates the data gathered by associations in all states.

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### Fall Cleaning Of Gardens Reduces Damage From Insects

The best time to start an attack upon 1937 vegetable garden insects is this fall after Jack Frost's nightly visits have killed all vegetation, according to Lee A. Somers, extension specialist in vegetable gardening, College of Agriculture, University of Illinois.

"Old sweet corn stalks; old cucumber, squash and melon vines; old cabbage and cauliflower stumps, and old tomato vines if left in the garden act as overwintering quarters for several of the worst garden insects," Somers said.

"If crop residues, weeds and other kinds of garden trash are carefully raked off the garden and burned, thousands of insect eggs will be destroyed," he continued. "They will not have a chance to come out early next spring and feed on the struggling young garden plants. Burning or otherwise destroying crop residues is especially important."

After the garden has been thoroughly cleaned, Somers recommends plowing under a heavy application of manure and allowing the garden to lay in the rough furrow over winter. This practice of winter fallowing has two advantages, he asserted. It permits the soil to absorb the maximum amount of moisture in snow and rainfall and gives the upper soil a chance to dry out and be ready for early gardening in the spring.

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### Roadside Trees May Scatter Disease If Transplanted

Because of alarming increases in contagious plant diseases and insect pest infestations, Illinois tree lovers are warned against the practice of transplanting trees without first obtaining an inspection certificate, according to Max G. Fuller, extension specialist in landscape gardening, College of Agriculture, University of Illinois.

"People often introduce tree diseases into new areas without knowing it," Fuller said. "A man may stop his automobile beside the road, dig up a small tree, tie it on to his car, take it home and plant it. The tree probably does not live, but it may carry harmful diseases and insects which will be fatal to other trees."

Fuller points out the danger in collecting native, free-growing plant material from outlying areas about the farm, stream or timber for use about the home grounds unless the plant have first been inspected by the state department of agriculture.

To give away or exchange trees, shrubs, vines or other plants without the precaution of inspection is to run the risk of spreading plant diseases and insect pests and to be guilty of violating the Insect Pest and Plant Disease Act which carries a fine of from \$25 to \$500 for conviction, Fuller explains. The Act also requires that nursery stock sold or given away be approved by the plant industry division of the State Department of Agriculture.

To avoid the further spread of disease and insects, anyone who desires to transplant trees or shrubbery may obtain official inspection by notifying Herbert F. Seifert, chief plant inspector, State Department of Agriculture, State Entomologist's Laboratory, Urbana.

Inspections are made free of charge during regular spring inspection tours.

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### Air-Conditioned Hen House Means More Winter Eggs

Whether the poultry house is modernistic or futuristic in its design matters little to the average Illinois hen, but she does appreciate "air-conditioning" in the cold winter months and shows her appreciation by keeping on laying, H. H. Alp, extension poultryman, College of Agriculture, University of Illinois, contends.

Housing of poultry for winter is a different problem from housing other farm livestock, Alp explained. The amount of heat developed by the birds is so insignificant from the standpoint of affecting room temperatures that those housing facilities are best which provide the hen with plenty of fresh air and at the same time protect them against extremely low temperatures.

Nearly every flock owner has seen egg production drop off after a severe cold spell. On the other hand experimental evidence indicates that heated houses with temperatures of 60 degrees Fahrenheit adversely affect the health, body, weight and egg size of the birds.

In preventing slumps in egg production following cold spells, the use of heat to maintain an average temperature of about 40 to 50 degrees Fahrenheit has been found effective. For many flock owners, temporary heat during cold periods can be provided by the use of brooder stoves or some other common type of room heater.

The kind of heating unit used will vary with the availability and price of fuel, Alp said. In the event of a cheap source of fuel, regular heating units might well be installed, such as hot water pipes laid in the floor or hung on one of the walls.

"If heat is to be used profitably in poultry houses, it is necessary that it be low in cost of operation and not represent a big investment," Alp asserted. "To consider it more than a possible supplementary aid in getting winter eggs is a mistake."

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# The Extension Messenger

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## Prices For Soybeans Are Likely To Continue Favorable

Present conditions indicate a continued favorable price for the 1936 Illinois soybean crop which, despite the drouth, is expected to total 17,600,000 bushels, 4,200,000 bushels less than last year, according to L. J. Norton, professor of agricultural economics, College of Agriculture, University of Illinois.

"Commercial beans in Illinois now go chiefly to processors who make two principal products, soybean oil and soybean meal," Norton said. "The prices of these two products determine the value of the beans for milling."

In pointing out the manner in which changes in the prices of either oil or meal affect soybean prices, Norton stated that a cent a pound in the price of oil is equivalent to about eight cents a bushel in the price of beans, and a change of \$1 a ton in the price of meal is equivalent to about  $2\frac{1}{2}$  cents a bushel.

Recent prices for soybean oil in tank cars at midwestern mills have been around eight cents a pound. About eight pounds of oil are obtained from a bushel of beans, making the oil in a bushel worth 64 cents. With soybean meal recently quoted at \$40 a ton, or two cents a pound, the 48 pounds of meal, the approximate amount obtained from a bushel of beans, would be worth 96 cents. The combined value of oil and meal from a bushel of beans is, therefore, around \$1.60.

"From this amount local handling costs, freight and processing costs and the price to the farmer must be paid," Norton said. "Processing costs vary with the volume handled, of course, but there is probably not a large margin of profit at the prices recently paid farmers of around \$1.20 a bushel."

"Soybean meal finds a large market in livestock feeds. Present prices for soybean meal are about on a parity with cottonseed meal, but are cheaper than linseed meal. With the short crop of corn and other feed grains, all feedstuff will average high until new crops are grown."

As further evidence that favorable soybean prices will be maintained, Norton pointed out that during the past two seasons the food industry has been making extensive use of soybean oil. Reduced crops of cotton caused by acreage reduction programs have cut the output of cottonseed oil, and the current price of soybean oil is a little under that of cottonseed oil. Also, the short hog production has reduced supplies of lard, thereby increasing the demands for soybean oil.

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## Farm Real Estate Shows 7 Per Cent Rise In Illinois

Reflecting increased income from farm production and an improved demand for farm land, the average value of farm real estate in Illinois is 7 per cent higher than last year and 20 per cent higher than in 1933, according to C. L. Stewart, professor of agricultural economics, College of Agriculture, University of Illinois. Basing his findings on a recent report prepared by the federal bureau of agricultural economics, Stewart points out that in the United States as a whole, real estate values are quoted as 4 per cent higher than last year and 12 per cent higher than 1933.

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Pasture Problem To Be Aired At Farm And Home Week

With brighter crop prospects ahead for 1937, a program designed to assist Illinois farmers in taking advantage of higher prices and in re-establishing legume and pasture seedings is scheduled for the agronomy short course at the annual Farm and Home Week, sponsored by the College of Agriculture, University of Illinois, January 11 to 15.

Opening the course at 1 o'clock on the afternoon of the first day, J. C. Hackleman, crops extension specialist of the agricultural college, will discuss the problem of making the supply of legume seeds go farther. He will be followed by O. E. May, director of the regional soybean industrial products laboratory, located at the college, who will point out some of the recent developments in the industrial uses of soybeans.

Pasture improvement problems will be considered the second day with the agronomy, animal husbandry and dairy departments cooperating to present all phases of pasture management.

Hybrid corn, the latest development in corn improvement, will feature the discussions on the third day. The range of subjects will include hybrid corn performance tests, kind of soil needed for hybrid corn production, the use of hybrid corn in reducing chinch bug damage and the grasshopper control campaign for 1937.

Effects of soil conservation practices on productivity, use of legumes in soil conservation and the control of erosion by vegetation will be taken up on Thursday, the fourth day.

Friday, the final day, will be weed day with discussions centering around weed control problems. A session will also be devoted to county seed wheat improvement programs.

"The agronomy short course is just one of the more than 20 such courses that will be offered at the 40th annual Farm and Home Week," asserted W. L. Burlison, head of the agronomy department of the agricultural college. "In addition to the many short courses offered by the various departments of the college, speakers recognized as national authorities will give a view of world conditions affecting farming and rural living as they address the general sessions held daily."

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Farm Income Outruns Prices Of Products Farmers Buy

Incomes received by Illinois farmers during the past four years have increased much more rapidly than prices paid by farmers for commodities bought, according to Illinois Farm Economics, a monthly publication issued by the department of agricultural economics, College of Agriculture, University of Illinois.

This tendency for commodity prices to lag behind income has been true for industrial workers as well as for farmers. It is reported in the circular that factory payrolls in the United States have increased much more rapidly since 1932 than the cost of living.

The index of the purchasing power of income to Illinois farmers in September, 1936, was 104, or 18 per cent higher than in September a year ago. However, since September lower prices have been reported for a number of Illinois farm products.

Greatest price declines were shown for potatoes, apples, butterfat, oats and eggs. Slighter declines in prices were shown for corn, sheep, chickens, lambs, hogs, wool, milk and milk cows. Illinois farm prices of barley, hay, horses, wheat, beef cattle and veal calves increased from September to October. The combined index of Illinois farm prices was listed at 101 in September and 98 in October.

-1/-



### Worn-Out Adult's Coat May Make Snow Suit For Child

Dad's worn-out coat or big sister's out-grown wrap may be just the material to make a snow suit for a small person who likes to romp outdoors during the winter, suggests Miss Edna Gray, extension specialist in clothing, College of Agriculture, University of Illinois.

An old camel's hair coat is ideal for this purpose, she says, and saves many a penny which would have to go into a purchased play suit. Any number of commercial patterns are to be found which will aid in making the garment.

Warmth is the prime requisite in an outdoor wrap. Fabrics are warmer when so woven that the material encloses lots of air, Miss Gray explains. The many minute spaces between the fibers slow down the passage of air and therefore the body heat which has warmed the garment escapes less rapidly.

For this reason fuzzy, loosely woven and soft fabrics are the best buys for snow suits even though they are not so durable, Miss Gray believes.

Wool is considered the most practical. It is a poor conductor of heat owing to the many air-pockets in its make-up. Wool also takes up considerable moisture and hangs onto it without passing it on to other fibers. This prevents the child's indoor clothing from becoming damp while he is out-of-doors.

Another fabric which is being used has a suede finish thus preventing rapid circulation of air.

Lightness of weight is also to be desired, says Miss Gray. The child will soon tire just from wearing a heavy garment. The suit also should have looseness, but not bulkiness.

A good play suit has a low, even, rolling collar to keep out cold winds while allowing the head and neck freedom. Roomy pockets, placed at hand level and with openings that slant to the side are handy and will not tear readily.

The back needs to have easy looseness across the shoulders to permit getting the suit on and off easily. Sleeves of the wide raglan type are advocated, since they allow for extreme arm movements, adapt to growth, and fit comfortably even when a sweater or extra indoor clothing has to be worn. The seat should allow unrestricted bending.

Wide, roomy legs that blouse slightly over knit anklets, allowing free knee action and room for growth are desirable. Knitted sections for anklets, wristlets and along the waist line in the back can be purchased at the notion counter or knit at home. They fit snugly and have plenty of stretch.

As for fastening the garment, either zippers or big buttons will do, says Miss Gray. Zippers with a safety lock are easy to work; big buttons can be slipped into corresponding large button holes by small fingers. In any case, there should be a long center-front or side opening which will permit the child to slip in and out of the garment easily. This will encourage self-dressing.

Last but not least, gay colors should be used for the garments. They afford protection because they are readily seen by the motorist and children enjoy wearing them.

Good companion for the snow suit is the close fitting knitted cap, sometimes made in one with the garment and sometimes fitting over or under the collar of the suit.

Galoshes that are light and easy to handle and with linings that keep them from slipping are a necessary part of the child's outfit, Miss Gray reminds. Zippers should be easy to reach and work.



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# The Extension Messenger

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## Straw And Manure Protect Soils From Potash Shortage

Careful return of manure and straw to Illinois fields provides a "soil security program" for those lands that are on the verge of a potash deficiency, according to L. B. Miller, associate in soil experiment fields, College of Agriculture, University of Illinois.

In the growing of corn and grain crops, fully two-thirds of the potash content is in the cornstalk and straw, Miller pointed out. If these by-products of the farm are left on the land or are applied as manure, they return some potash to the "soil bank" to be used again.

A study of crop yield data over a 20-year period on six soil experimental farms on the gray soils of southern Illinois shows that yield levels were as high with manure as with potash, basic treatments of limestone and phosphate having been used in each case. The manure was applied at the rate at which with careful management it could be accumulated on any livestock farm.

For the farmer who markets his crops as grain, the problem is somewhat different, Miller explains. At the Ewing soil experiment field in Franklin county, the corn yields on limed gray silt loam on tight clay for the rotation ending in 1928 were 28 bushels. Since that time yields have declined to 21 bushels.

This decline appears to be caused by potash deficiency for, with the application of oats straw at the rate of two tons an acre for each four-year rotation since 1929, the corn yields have been revived to an average of 45 bushels for the last four-year period. This treatment seems also to have satisfied the potash needs of other crops in the rotation. Analysis of the straw showed that each two-ton application contained about as much potassium as is supplied by 110 pounds of muriate of potash.

"After limestone and clovers have boosted crop yields above submarginal levels, Illinois farmers, especially in the southern part of the state, will do well to watch for potash deficiency," Miller said. "Not that legume farming is a breeder of potash shortage in soil, but as yields go up, greater demands are made upon soil minerals. When crop growth is sufficient to exhaust the supply of any one of the plant nutrients, the crop is handicapped.

"A minimum acreage of soil-depleting cultivated crops such as corn and soybeans, together with the return of manure and straw, will go a long way toward making Illinois farms self-sufficient in their potash requirements."

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## Four-H Club Members Support Tree Planting Program

The problem of returning three million acres of eroded Illinois land to its original use of growing forest trees is now being attacked by 4-H club members of the state. As many as 500 trees for field or gully planting or enough trees to plant a windbreak may be obtained free of charge, except for express costs, by 4-H club members carrying on forestry projects, it is announced by E. I. Pilchard, extension specialist in junior club work, and J. E. Davis, extension forester, College of Agriculture, University of Illinois.

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Farm-Home Week Courses Feature Health of Livestock

Poultry disease problems, pasture improvement and control of the spread of horse diseases will be among the timely subjects to be discussed in the animal husbandry short course held as a part of Farm and Home Week at the College of Agriculture, University of Illinois, January 11 to 15.

Poultry clinics, with flock owners of the state invited to bring specimens for autopsy, open the poultry division discussions on the first day. Disease, feeding and housing problems will feature the discussions throughout the week, with the final day devoted to subjects related to turkey production.

Reflecting the serious effects of last summer's drouth on Illinois pastures, the animal husbandry, dairy and agronomy departments will hold joint sessions on Tuesday to present suggested methods for bringing pastures back to normal. In addition to discussions led by staff members of the agricultural college, pasture management is the subject of a talk to be given, Tuesday, by H. D. Hughes, Iowa State College, Ames. Tuesday evening, the annual stockmen's banquet will feature an address by Dean W. C. Coffey, Department of Agriculture, University of Minnesota, University Farm, Minnesota.

Recent advances in knowledge of horse diseases will be explained by Dr. Robert Graham, chief in animal pathology and hygiene, on Wednesday, the third day. He will also report results of the study now being made to combat so-called corn stalk disease in horses and explain the community method of bot treatment.

Crossbreeding in swine production, molasses substitutes for corn in rations for fattening hogs and the place of pastures in growing and fattening hogs feature the animal husbandry short course discussions on Thursday.

Topics centering around profitable lamb feeding, sheep breeding and wool marketing are scheduled for the final day.

"More than 20 short courses are being planned to acquaint visitors with the results of study carried on by the agricultural college on various farm and homemaking problems," according to Assistant Dean R. R. Hudelson. "Visitors may choose the particular discussion they wish to hear at any specified hour."

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Lambs Gain Twice As Fast When Corn Is Supplemented

Lambs turned into corn fields where soybeans have been planted in the corn or where they have access to legume pasture or to legume hay during the late fall gain about twice as fast as lambs having nothing to balance the corn, according to E. T. Robbins, livestock extension specialist, College of Agriculture, University of Illinois.

Later on, in the feed lot, ear corn or shelled corn and legume hay make one of the best fattening rations, Robbins continued. If silage is to be used, it is well to feed each lamb about two-tenths of a pound a day of such a high protein feed as cottonseed meal and to mix limestone with the salt that is fed.

A good way to use the limestone is to mix four pounds of finely pulverized limestone with one pound of salt. Lambs getting pasture or some legume hay seem to have no need for any mineral except salt.

Breeding ewes will do well on cheap, unsalable roughage for most of their feed if they have some legume hay each day. If they are kept largely on silage or have only a little legume hay it is well to feed a mixture of equal parts by weight of oats and bran, allowing as much as half a pound a day for each ewe during the last two months before lambing.

This practice of feeding oats, bran and legume hay, along with the limestone and salt mixture, is a good precaution against the so-called fatal pregnancy disease of ewes, Robbins pointed out.

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Heavy Storage Stocks Allay Threats Of Food Shortage

Threats of a food shortage this winter are minimized by reports that the nation's ice box is more heavily stocked than usual, according to Illinois Farm Economics, a monthly publication issued by the department of agricultural economics, College of Agriculture, University of Illinois.

Cold storage holdings in the United States on November 1 were higher than for the same month during the five-year period, 1931-35. While pork in storage was 14 per cent below average, stocks of beef and mutton were relatively high, accounting for total stocks of meats slightly above average.

Supplies of eggs and apples were lighter than usual, but those of poultry, cheese, butter and lard were above average. However, as compared with 1934, storage holdings of all these products except poultry were lighter.

Both the farmer and consumer benefit by movements into and out of storage, since these movements help to distribute the highly seasonal marketing of many perishable products over a longer consumption period, thereby acting as a price stabilizing influence.

It is pointed out, as an illustration, that were it not for storage supplies the price of eggs would be much lower during March, April and May when production is heavy and much higher in October, November and December when production is low.

A part of the meats in storage are those in curing processes. Storage holdings of pork usually are lowest about November 1, and increase with the seasonal marketing of spring pigs. The peak in storage stocks occurs in late spring or summer, varying somewhat with the kind of curing used. Stocks of lard are lowest about December and highest in August.

Poultry is held largely in a frozen condition, with the lowest storage stocks about August, and the highest in January or February. Eggs both fresh and frozen have lowest stocks in storage in March and the highest in August. Holdings of cheese are lowest in May and high in September and October, butter stocks are least in April and high in August and September. Apples are largely in storage by November 1, and have been largely moved out by June 1.

The amount of cold storage holdings is of interest to consumers, since it affects the supplies of foods available to them, the circular points out. When farm marketings of any of these products are unusually large, there is ordinarily a heavy into-storage movement which reduces the supply put on retail markets. On the other hand, when farm marketings are small, the out-of-storage movement supplements them.

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December Trading of Record Volume Is Now In Progress

A December business which gives promise of surpassing Christmas buying records for the past several years is now in progress, according to Illinois Farm Economics, a monthly circular issued by the department of agricultural economics, College of Agriculture, University of Illinois. Factors listed as influential in causing the December business increase are the unprecedented wave of announcements by many corporations of cash dividends to stockholders and the payment of substantial wage increases or bonuses to workers.

This action of corporations is attributed to an effort to avoid paying the new federal surtax on the undistributed corporate earnings, which according to law, becomes payable in March 1937, it is stated in the circular. By distributing net earnings to stockholders and wage earners, corporations can limit their tax payments to a levy ranging from 8 to 15 per cent. If they retain those earnings, they will have to pay a surtax ranging from 7 to 27 per cent in addition to the base corporation tax.

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## Illinois Now Has 17 Cooperative Sire Associations

Improvement of Illinois dairy herds through breeding programs moved forward with the recent announcement of the organization of the Lake-McHenry County Guernsey Breeding Association, the 17th such cooperative group in the state, according to C. S. Rhode, dairy extension specialist, College of Agriculture, University of Illinois.

Breeding Associations are now operating in Bureau, Coles, Ford, Hancock, Kankakee, Knox, Lee, Marshall-Putnam, Tazewell, Livingston and Winnebago counties. Others are in process of organization in Sangamon, Effingham and Will counties.

Organized under the direction of Farm Adviser H. C. Gilkerson, of Lake county, and Farm Adviser J. H. Brock, of McHenry county, the new association provides that members be enrolled in a dairy herd improvement association.

All member herds are tested for tuberculosis and Bang's disease, and each dairyman will own an interest in all bulls used. Each member supplies satisfactory housing facilities for the bull, including shelter, an exercising paddock, breeding stall and in some cases a small pasture lot. Each year the bulls will be moved from one member's place to another.

"The advantages of this cooperative work are evident to those who are acquainted with dairy breeding programs," Rhode said. "By moving the bulls from one herd to another, the members may prove them before they have had extensive service in any one herd. Should any of the bulls prove poor, they will be discarded before they ruin any member's herd and replaced by other carefully selected bulls. The good ones are kept in service as long as possible."

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## Washington County Among Leaders In Use Of Limestone

With the spreading of 650 carloads of limestone, Washington county is among those taking the lead in making this a banner limestone year in Illinois agricultural history, according to C. M. Linsley, soils extension specialist, College of Agriculture, University of Illinois.

The 30,000 tons used this year to sweeten Washington county soils for the growing of legume crops sets a new record for the county, topping by more than 2,000 tons the former high mark established in 1929.

Hoyleton claims the record limestone tonnage for any single community in the county with 200 carloads of limestone received this year. In 1935 this community spread 125 carloads of soil-sweetening limestone. The Oakdale community ranks second in the county with more than 100 carloads of limestone scattered.

"Washington county farmers, along with those living in other counties comprising the St. Louis district, have long recognized the necessity for conserving and improving their soils," Linsley said. "They know that limestone for acid soils and the growing of legumes regularly as a green-manure crop are the first steps in such a program."

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First Goal Of New Account Keepers Is To Pay Debts

New furniture, more land and better health and living for the family are among the goals which 125 new home account keepers in Illinois have resolved they will have some time in the future.

Asked by Mrs. Ruth Crawford Freeman, extension specialist in home accounts, College of Agriculture, University of Illinois, what goals they would strive for as they kept home accounts for the first time in 1937, homemakers set down immediate and long-time goals.

Paying off indebtedness is the principle ambition which will have immediate recognition. Under immediate goals the women also acknowledged a desire for more equipment, particularly new furniture, rugs, stoves, refrigerators and electrical appliances. They wished farmstead repairs, with home repair ranking first, then new water systems, electrification, furnaces, landscape gardening and repair of farm buildings. Finally, they wished family advancement with vacations and travel taking precedence over music lessons and books.

Land ownership is the long-time goal of many of these families, Mrs. Freeman reports. It is decidedly noticeable in the reports from counties ranking high in tenancy, she says.

Better education for the children is equally desirable, according to the account keepers. After that they desire financial solvency, security for the future with life insurance and emergency insurance assured.

Many look forward to better incomes and a knowledge of wise use of income. Several have intangible goals such as health, happy homes and leisure time in mind, and others desire to become better buyers.

Homemakers making these resolutions and starting home accounts under the guidance of Mrs. Freeman during the past three months are from DeWitt, Henry, Kane, Greene, Christian and LaSalle counties.

Montgomery, Shelby, Pike, Coles, Ford, Effingham and Livingston have scheduled dates for enrollment in home account groups in January.

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Crop Insurance To Be Aired At Farm And Home Week

Problems connected with the establishment of crop insurance are among the many subjects of current interest to be discussed at Farm and Home Week at the College of Agriculture, University of Illinois, January 11 to 15.

Reflecting the effort of the agricultural college to keep pace with latest developments in farming and farm operations, the crop-insurance short course is scheduled for Friday morning, January 15.

Opening the discussion, W. J. Wills, assistant in agricultural economics at the agricultural college, will explain the crop insurance plans in effect in California, Kansas and Canada.

Taking into account the millions of dollars' worth of insect damage caused to crops in the past few years, W. P. Flint, chief entomologist of the agricultural college and the Illinois State Natural History Survey, will report on insect hazards as they affect various parts of the state.

To show what has been done to aid in estimating damage in event of hail storm or other injury to leaves or blades of plants, G. H. Dungan, chief in crop production, will discuss the ability of crops to recover after such damage. His talk will be based on experiments made by the college.

A. L. Lang, assistant chief, soil experiment fields, will deal with the use of good soil management as an insurance against low yields, and C. L. Stewart, professor of agricultural economics, will seek to answer the question as to whether crop insurance can be practical in the corn belt.

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### Only Protein Need Be Bought To Produce Top Cattle

Additional protein is about all any Illinois farmer usually needs to buy for use with ordinary grain and roughage to produce top cattle, in the opinion of E. T. Robbins, livestock extension specialist, College of Agriculture, University of Illinois.

To support this contention, it was pointed out that the fattest steers seen on a recent cattle tour in Lee county were those fed by George Henrich, Fred Gilmore and Joy Sandrock. All three lots of cattle had linseed meal and in one case some cottonseed meal in addition to the corn and legume hay.

Cattle which had been fed for the same length of time on rations lower in protein did not draw as much praise from farmers who made the Lee county tour as did the cattle fed the better balanced rations.

While protein and grain are of value in producing top fat steers, the importance of wintering dry beef cows on roughage without grain has been repeatedly emphasized.

"A beef cow pays her way when she is kept to grind up cheap roughage of various kinds and convert it into a choice beef calf," Robbins said. "The calf should get the grain. Some of the most successful cattle raisers give the calves corn and oats from the time they first will eat and sell them at weights of 600 to 700 pounds at weaning time."

As an illustration he explained that John Crasius, Woodford county, has a herd of 10 to 12 good beef cows, the calves of which are fed grain as soon as they are weaned and then sold at weights of 700 to 800 pounds. These cows take care of the unsalable roughage produced on a 240-acre farm. During the past ten years this herd has produced \$134 of income for each \$100 of feed, as shown by farm management records. During this time records show that the average beef cow herd in Illinois has paid only \$90 for each \$100 of feed.

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### Progress Proves To Be Best Spring Wheat For State

Illinois farmers who will be looking for spring wheat seed in case severe cold weather kills their present seeding of winter wheat can do no better than to search out supplies of the variety Progress, according to G. H. Dungan, professor of crop production, College of Agriculture, University of Illinois.

Superiority of the Progress variety has been demonstrated in tests conducted on the college's experiment fields at DeKalb and Urbana. Progress over a ten year period was found to give next to the highest yields at DeKalb and relatively high yields at Urbana. In addition Progress matures fairly early and produces a flour of high quality.

Ranking next to Progress in importance is Illinois 1, which like Progress is a bearded variety. Illinois 1 is scab resistant and a constant producer, occupying practically the same place among spring wheats in Illinois that Turkey Red does among winter wheats. However, flour made from Illinois 1 wheat is medium to low in bread-making quality.

Highest yields at both DeKalb and Urbana were made by Garnet, a smooth, early maturing wheat of hybrid origin developed in Canada. Although the earliness of the variety is a distinct advantage when grown in central Illinois, the baking strength of flour made from Garnet is the poorest from any spring wheat grown on the Urbana field.

Although average yields seem high enough to recommend the growing of spring wheat, Dungan points out that when winter wheat comes through the winter satisfactorily, it yields about 25 per cent more than spring wheat will on the same soil.

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# The Extension Messenger

COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS

Timely Notes for Farm Advisers and others from the Agricultural College,  
Experiment Station, and Extension Service

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## Seed Corn Buyers Have Eyes On Farm-Home Corn Show

With drouth and grasshopper stricken states looking to Illinois for seed corn, the annual Illinois Seed Grain and Utility Corn Show will provide purchasers with their first opportunity to check the quality of the 1936 crop in this state, according to J. C. Hackleman, crops extension specialist, College of Agriculture, University of Illinois.

As in former years the corn show will be a feature of Farm and Home Week to be held at the college January 11 to 15.

Despite an unfavorable growing season entries are expected to reach the 500 mark, representing an increase of 100 more than last year. The growing popularity of the show is indicated by the 30 entries in the 10-acre yield contest. This is more than double the contestants in this event last year. Some yields of more than 100 bushels have been reported in the entries.

Howard Clegg, Dana, won the 10-acre yield contest last year, and Clarence Watson, Macomb, won the title of "corn king." Other title holders whose honors will be at stake in the various divisions of the show are C. E. Canterbury, Cantrall, soybeans; Alfred Drake, Forreston, hard winter wheat, and Paul Sturgell, Paris, "corn prince."

While yields this year have not been as high as in years of more favorable seasons, the show can draw on a crop of 211,000,000 bushels of corn as compared to the drouth riddled 1934 crop of 146,000,000 bushels. The state also has a crop of soybeans estimated at 17 million bushels, about 4 million short of last year's crop.

The show included 31 classes exclusive of sweepstakes. This year a new class, a peck of certified seed corn, has been added. Entries in this and other classes, as has been the case in past years, will be subjected to germination tests.

"This practice of subjecting corn entered in the show to germination tests illustrates the need for testing all seed corn," Hackleman said. "At the grain show held in connection with the Chicago International Live Stock Show early this month, one sample of corn which came from the northern section of the corn belt and which had not been fire-dried showed only 60 per cent germination."

Prizes for the corn show winners will be presented at the annual banquet of the Illinois Crop Improvement Association on Wednesday evening, January 13.

Copies of the premium list may be obtained by writing the College of Agriculture at Urbana.

-1/-

## Tomato Cannery Short Course Set For January 7, 8, 9

A special short course for tomato cannery fieldmen, the first of its kind ever held in the state, is scheduled for January 7, 8 and 9 at the College of Agriculture, University of Illinois. Lee A. Somers, extension specialist in vegetable gardening, will have charge of the school, assisted by other staff members of the horticultural departments of the college.

-1/-



### Illinois Farmers To See Movies Of European Methods

With Illinois farmers buying and using more machinery than for a number of years, they will have a chance to contrast some of their methods with European practices during the 40th annual Farm and Home Week, January 11 to 15, at the College of Agriculture, University of Illinois.

An agricultural engineer's impression of European farm equipment will be presented in the general session at 3 p.m. Monday, the first day, when G. W. McCuen, chairman of the agricultural engineering department of the College of Agriculture, Ohio State University, Columbus, talks on "European Agriculture from Highways and Byways."

In his own automobile McCuen toured eight European countries stopping at points of interest to study at first hand the manufacture of machinery and the use made of the machinery by various farmers. McCuen paid particular attention to threshing equipment, and the 1,350 feet of film which he took on his visit and which he will show at Farm and Home Week illustrates threshing as it is carried on in each of the countries visited.

Keeping pace with the interest farmers are showing in world affairs, the Farm and Home Week program also includes a discussion of "The State of the World Today and the Outlook for International Peace," by J. W. Garner, head of the department of political science, of the University of Illinois. Prof. Garner's talk is scheduled for 3 p.m. Tuesday, the second day. At 11 a.m. Friday, C. V. Gregory, editor of Prairie Farmer, Chicago, who was a member of President Roosevelt's committee to study European cooperatives this past summer, will speak on "Some Things We Can Learn from Europe."

An illustrated bulletin giving the program for Farm and Home Week may be obtained by writing the College of Agriculture, at Urbana.

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### Old Breeders Superior For Improving Poultry Flocks

Approach of the 1937 hatching season makes this a good time for Illinois poultry raisers to start plans for improving their flocks through breeding, according to H. H. Alp, poultry extension specialist, College of Agriculture, University of Illinois.

"The first step is to decide what is the greatest weakness of the present flock," Alp explained. "In some flocks it is egg size, winter pause in production, body size, livability or vigor, rate of maturity, broodiness or other faults that need correction."

Three sources of stock from which improvement can be expected are a local breeder, a breeder outside the local territory and the poultry raiser's own flock. If fowls from the home flock are to be used, it will pay to inspect them carefully for vigor, maturity, body size and conformation to type, keeping in mind the standard weight requirements for the particular breed kept.

Use of pedigreed males from a reputable breeder may give the improvement desired. However, he points out that the mere fact that a bird is pedigreed is not sufficient to guarantee good breeding results. It is sometimes possible to buy a two- or three-year-old male which the breeder is through with, but which has proved his value as a breeder.

It pays to use in the breeding flock two-year-old birds that meet the requirements desired. Older birds have demonstrated their ability to live, it is pointed out.

Careful selection of eggs used for incubation purposes to see that they have desirable market characteristics such as size and shell color is also a profitable practice.

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### Short Course To Keep Pace With Increase In Tractors

Increased use of power machinery on Illinois farms, reflected in the purchase of approximately 20,000 tractors by farmers of the state in the past year, has made it necessary to hold the annual tractor and gas engine short course at the College of Agriculture, University of Illinois in two sections. The first will be held January 25 to 30 and the second, February 1 to 6.

Since facilities available for the course make it necessary to limit enrollment in each course to the first 35 who apply, R. I. Shawl, professor of agricultural engineering, announces that the second section has been added this year to accommodate an anticipated large enrollment. The course offered the second week will repeat the first week's instruction.

It is estimated that there are now more than 108,000 tractors on Illinois farms, Shawl said. With improved buying power farmers are equipping their farms with tractors and other much needed equipment. The course, open to anyone 16 years of age or older, will also apply to the many road and industrial tractors in the state.

Equipment for the course includes 19 tractors of the latest design and of various types. Several will have low-pressure pneumatic tires and high-compression engines. In addition to the tractors 10 tractor engines mounted on frames are available, along with 25 farm gas engines and a representative assortment of magnetos, carburetors, air cleaners and engine parts.

Construction and operation of tractors and tractor parts will be explained in lecture work covering three hours a day. For four or five hours a day, those taking the course will work with tractors and gas engines, studying such things as construction, engine timing, ignition, carburetors, trouble work and tractor operation.

Moving pictures will be used to show interesting phases of power farming not covered during the lecture or laboratory periods.

A registration fee of \$2.50 is charged to cover the cost of material used.

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### Tests Show Corn Is Worth More Than Molasses As Feed

Corn may be relatively higher in price, but it is also of more value a pound than molasses when fed in large amounts, according to preliminary reports of feeding tests conducted this fall by the College of Agriculture, University of Illinois.

With corn costing \$1 a bushel, molasses is probably worth about \$30 a ton when used to replace about one-fifth to one-third of the corn.

"This is a lower value for molasses than the figures obtained when it has been used in small amounts and sometimes merely to sprinkle on unpalatable roughage to make it taste better," E. T. Robbins, livestock extension specialist, explained. "Used in small amounts and as an appetizer molasses is worth about as much a pound as corn."

Because molasses has been relatively cheap, attempts were made in the feeding tests to replace considerable corn with it. Stock has been given all the molasses which would be consumed from a trough with other feed given separately. In other cases molasses has been poured over the grain. As much as one-fourth of the grain has been replaced with molasses for hogs and as much as one-third for cattle. Molasses is not so convenient to feed as grain, it was pointed out.

While casting about for ways to improve rations, cattlemen should not overlook the fact that a muddy feedlot wastes feed, retards gains, adds to the cost of 100 pounds of gain and damages the appearance of cattle when marketed, livestock specialists of the college said. To cover the ground and keep the cattle above the mud, many feeders use cornstalks or straw. Clarence Hart, Lee county, recently concreted the lot in which he feeds about 100 cattle. There are now many concrete feedlots in Illinois.

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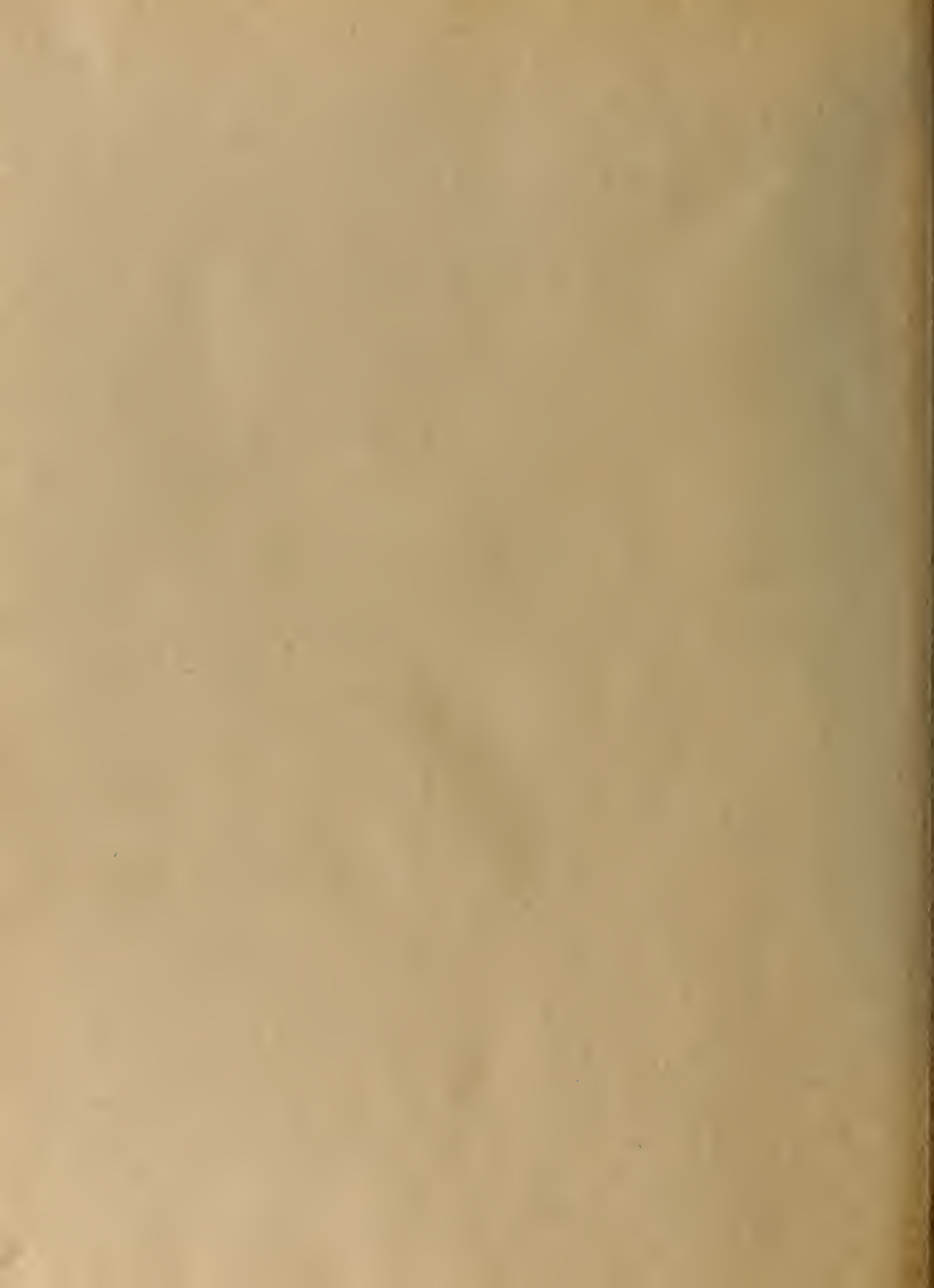
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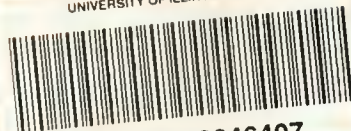








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